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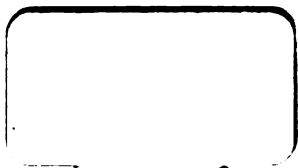
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THE
EDINBURGH
MEDICAL AND SURGICAL
JOURNAL:

EXHIBITING
A CONCISE VIEW

OF THE LATEST AND MOST IMPORTANT
*DISCOVERIES IN MEDICINE, SURGERY,
AND PHARMACY.*

1805.

VOLUME FIRST.

EDINBURGH:

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CONTENTS.

ORIGINAL COMMUNICATIONS.

NO. I.

ART. I. Cases of Erythema Mercuriale, with Observations, by Dr Spens	Page 7
II. Cases of Tumours in the Pelvis, growing from the Sacrosciatic Ligament, by Dr Drew	20
III. On the Treatment of Chorea Sancti Viti, by Mr M'Mullin	25
IV. Cases of Diseased Portions of the Tongue removed by Ligatures, by Dr Inglis	34
V. Case of Malconformation of the Urinary and Geni- tal Organs, by Mr Coates	39
VI. On the Deficiency of the Urinary Bladder, by Dr Duncan jun.	43
VII. Case of Catalepsy, with Remarks, by Dr Lubbock	61
VIII. Case of Enteritis, by Mr Rumsey	64

NO. II.

I. Case of Malconformation of the Urinary and Geni- tal Organs, by Mr Astley Cooper	129
II. On the Deficiency of the Urinary Bladder, by Dr Duncan jun.	132
III. Observations on the Yellow Fever, by Professor Stringham	143
IV. On the Use of the Muriate of Lime in the Cure of Scrofula, by Dr Wood, Newcastle	147
V. Case of an Encysted Tumour in the Brain, by Dr Bateman	150
VI. Cases illustrating the Use of Opium in Rheumatism, by Dr De Roches	154
VII. Cases of Tumour in the Breast, by Dr Reeve	159
VIII. Case of Cancer of the Testicles terminating favour- ably by the supervention of Scurvy, by Mr Livingstone	163
IX. On the Pneumonic Diseases of the Poor, by Dr Badham	166
X. Historical and Critical Analysis of the Functions of the Skin, by Dr Kellie	170
XI. The Inquirer, No. I.—On the Treatment of Ul- cerated Legs	187

NO. III.

ART. I. Essay on the Analysis of Animal Fluids, by Dr Bostock	Page 257
II. On the Diseases of the 88th Regiment in Bombay, by Dr M'Gregor	266
III. Case of Amputation at the Shoulder-joint, by Dr Watson Robinson	289
IV. Case of Trismus cured by cold Affusion, by Mr Dalrymple.	294
V. Case of Tympanites, by Mr Collins	298
VI. Case of Torpor from Cold, with Observations on the Effects of diminished Temperature on the living System, by Dr Kellie	302
VII. Dissections of Diabetes Mellitus, by Dr Rutherford	314
VIII. Case of Protrusion of the Tongue, by Dr Clanny	317
IX. Case of Flatulent Colic, with Hernia, cured by Opium, by Dr Ross	318
X. The Inquirer, No. II.—On the Inexpediency of erecting Foundling Hospitals	319

NO. IV.

I. Case of Hepatitis, followed by Bilious Expectoration, by Alexander Monro jun. M. D. & P.	397
II. Account of a peculiar Structure of the Membrane lining the Urethra, by Dr Barclay	403
III. Case of a Bony Tumour successfully extracted from the Orbit of the Eye, by Mr Lucas	405
IV. Analysis of the Bone extracted in the preceding Case, by Dr Duncan jun.	407
V. Drawings, with the Description of an Instrument for extracting Polypi from the Nose, by Mr Robertson	410
VI. Case of a Blue Girl, with Dissection, by Dr Marcet	412
VII. Case of Strictures of the Urethra removed by the Caustic Bougie, with the Appearances on Dissection, by Mr Carmichael	416
VIII. Observations on the Cure of those Unnatural Articulations which are sometimes the consequence of Fractures of the Extremities, with Cases, by Dr Inglis	419
IX. The Inquirer, No. III.—Is there any Certainty in Medical Science?	425

CONTENTS.

CRITICAL ANALYSIS.

NO. I.

ART. I. Medical Reports on the Effects of Water, cold and warm, as a Remedy in Fever and febrile Diseases, whether applied to the Surface of the Body, or used internally, by James Currie, M. D. &c.	Page 67
II. An Essay, Medical, Philosophical, and Chemical, on Drunkenness, and its Effects on the Human Body, by Thomas Trotter, M. D. &c.	73
III. Practical Observations on the Treatment of Strictures in the Urethra, and in the Oesophagus, by Everard Home, Esq. F. R. S. &c.	81
IV. Surgical Observations, containing a Classification of Tumours, &c. by John Abernethy, Esq. F.R.S. &c.	90
V. Nouveau Dictionnaire d'Histoire Naturelle appliquée aux Arts, &c. par une Société de Naturalistes et d'Agriculteurs	102
VI. Duplessy, des Végétaux Refineaux, &c.	104
VII. Memorie della Societa Medica di Emulazione di Genova	106

NO. II.

I. An Essay on Respiration, by John Bostock, M. D. &c.	194
II. A Dissertation on Gout, by Robert Kinglake, M. D.	201
III. An Account of two Cases of Gout, which terminated in Death, in consequence of the external Use of Ice and cold Water, by A. Edlin	209
IV. A Reply to Mr Edlin's Cases of Gout, by Dr Kinglake	210
V. Observaciones et Epicrisis de Corticis Peruviani salutari et proficuo usu in Podagra. A. Francisco Tavares	211
VI. Traité des Maladies Goutteuses, par J. P. Barthez	212
VII. An Improved Method of treating Strictures in the Urethra, by Thomas Whately, &c.	214
VIII. Morborum Puerilium Epitome, Auctore Gulielmo Heberden, &c.	218
IX. S. T. Soemmerring, Abbildungen des menschlichen Auges	222
X. Account of a peculiar Arrangement of the Arteries distributed on the Muscles of slow-moving Animals, by Anthony Carlisle, &c.	225
XI. Practical Observations on Insanity, by J. M. Cox, M. D.	228

NO. III.

ART. I. Les Loix éclairées par les Sciences Physiques, par François Foderé	Page 330
II. <i>Medicine Legale et Police Médicale de P. A. O. Mahon</i>	ib.
III. Facts intended to prove the Yellow Fever not to be contagious, by Benjamin Rush, M. D.	342
IV. Observations on Cancer, by Everard Home, &c.	352
V. The Works of Dr John Brown	357
VI. M. Dupuytren's Account of a Fœtus found in the Abdomen of a Boy	376
VII. On the Disease in Corn called the Blight, by Sir Joseph Banks, Bart.	380
VIII. Observation sur une Maladie de l'Organ de l'Ouïe guérie radicalement par la Perforation de la Membrane du Tympan, par J. P. Maunoir	382
IX. Surdit�� gu��rie par la Perforation de la Membrane du Tympon, par P. C. Celiez	382

NO. IV.

I. <i>Traité Pratique des Maladies des Yeux</i> , par A. Scarpa	430
II. An Inquiry into the Rot in Sheep, and other Animals, in which a Connexion is pointed out between it and some obscure and important Disorders in the Human Constitution, by Edward Harrison, M. D. &c.	440
III. <i>Succincta Descriptio Febris Malag�� nuper s��vientis</i> , A. D. J. E. ab Arcjula	447
IV. <i>Medicine éclair��e par l'Observation et l'Ouverture des Corps</i> , par A. Proft	453
V. The Principles of Botany and Vegetable Physiology, translated from the German of Willdenow	455
VI. Cases of two extraordinary Polypi removed from the Nose, &c. by Thomas Whately	465
VII. Elements of Galvanism, by C. H. Wilkinson	468
VIII. Clinical History of Diseases, by John Haygarth, M. D. &c.	479
IX. Answers to all the Objections against the Cow-pock, by Joseph Adams, M. D. &c.	486
X. <i>Pharmacop��cia Collegii Medicorum Edinburgensis</i>	486
XI. <i>Pharmacop��cia Nosocomii Regii Edinburgensis</i>	492
XII. Tables of <i>Materia Medica</i> , &c. by Jeremiah Kirby, M. D.	492

CONTENTS.

vii

MEDICAL INTELLIGENCE.

NO. I.

Account of the Surgical Academy at Berlin	-	Page	111
Account of the Fever Institution in London	-	-	117
Quarterly Report of the Carey-Street Dispensary, London	-	-	123
On the Antivariolous Powers of Vaccination	-	-	124
On Pulmonary Tubercles	-	-	127

NO. II.

Regulations for improving the Situation of the Medical Officers of the Navy	-	-	241
Disso of the Army	-	-	244
Quarterly Report of the Carey-Street Dispensary	-	-	246
On the Use of Sulphurated Potash in Tinea Capitis, by Mr Barlow	-	-	248
Antivariolous Power and Progress of Vaccination	-	-	ib.
Description of Colonel Crichton's Car for conveying sick and wounded Troops	-	-	252
Mr Ruffel's Account of a singular variety of Hernia	-	-	253
Medical Works in the Press	-	-	254
Foreign Medical Literature	-	-	256

NO. III.

Board of Health	-	-	383
New Medical and Surgical Society in London	-	-	ib.
Progress of Vaccination	-	-	384
Quarterly Report of Carey-Street Dispensary	-	-	386
List of Medical Graduations at Edinburgh, 24th June 1805	-	-	390
Regulations of the University of Edinburgh regarding the granting of Degrees in Medicine	-	-	391

NO. IV.

First Report of the Board of Health	-	-	494
Office-Bearers of the New Medical and Chirurgical Society, London	-	-	504
Resolutions of the Royal Jennerian Society	-	-	505
Extract of a Letter from a Correspondent in London, on the sudden Deaths in Dropsies, Mixture of Variolous and Vaccine Matters, &c.	-	-	506
Letter from Dr Cassels on the Black Drop	-	-	508
			Letter

Letter from Fabbioni of Florence on the Fever Epidemic at Leghorn	Page 509
Letter from Dr R. Pearson on the Cyclopædia and Muriate of Lime	ib.
List of Graduations at Edinburgh, 12th September 1805	510
Lectures at the University of Edinburgh	511
Glasgow	ib.
Regulations respecting Degrees at Glasgow	512
Lectures at St George's Hospital	ib.
Account of Farmer Jesty	513
Quarterly Report of Carey-Street Dispensary	514
List of New Books	516
Index	523

THE
EDINBURGH
MEDICAL AND SURGICAL
JOURNAL:

1. JANUARY 1805.

No. II.

ADVERTISEMENT.

In presenting a New Periodical Work to the attention of the Medical Profession, the Editors think it necessary to say a few words in explanation of their design.

Their object is the improvement of Medicine, by collecting the scattered hints, and registering the important facts connected with Medical Literature and Medical Practice. A slight acquaintance with the healing art will show how extensive and interesting a field is yet unexplored, and how many advantages still remain unimproved. Such improvements and inquiries can only be successfully made by the united efforts of many. To connect these, to render them immediately useful, nothing seems preferable to the plan of a periodical publication—nothing seems so well calculated to promote extensive and general good, by circulating useful information, by bringing into public notice interesting tracts and casual hints and observations, which, being deemed too short for separate publication, might lie ma-

ny years concealed, or perhaps irrecoverably perish, by collecting from sources not purely medical, facts and observations connected with Medicine, and by diffusing the knowledge of Medical Literature.

The custom of declaiming against the multitude of similar publications is unreasonable. Their very existence is a proof that their utility is felt and acknowledged. Their extensive circulation, and the communications which support them, depend entirely on the approbation of the public. Examples might be adduced of works of this description, which have deservedly acquired a very great degree of reputation; and it is presumed that the Profession at large will be ready to accept, and to contribute fresh information of the same kind. All such periodical works, from the very nature and origin of them, have their periods of vigour and decay. They flourish, and they fade. They terminate abruptly; or, after reaching a respectable old age, they are suspended. New ones arise. Their powers are rapidly developed. The novelty of their views, the originality of their execution, every thing tends to render their commencement interesting and energetic. A New Work of this kind, therefore, if properly conducted, cannot fail to be favourable to the best interests of Medical Science.

Since the plan of the EDINBURGH MEDICAL AND SURGICAL JOURNAL was first announced, a circumstance has occurred which has greatly increased the probability of its accomplishing all that was expected from it. A work, whose objects were in many respects similar, had been projected by several gentlemen connected with the public Medical Institutions of London, and eminently qualified to execute what they had planned. In consequence of the arrangements previously made in Edinburgh, it has been relinquished; and a combination has superseded a competition for public patronage. The original title has been retained, merely to distinguish this Journal from similar publications, although communications from every quarter are requested; but the names of the ostensible editors formerly announced

nounced are now withdrawn, because they are in future to be considered only as members of an extensive Association, resident partly in LONDON and partly in EDINBURGH. By thus connecting these two distinguished Medical Schools, it seems reasonable to expect that sufficient materials may be collected to render each number not only an agreeable relaxation from the cares and fatigues of actual practice, but also the vehicle of useful information on every branch of the Profession, while at the same time an opportunity will be afforded to all who are actuated by a zeal for the diffusion of knowledge, to record cases of difficulty and danger, to submit doubtful opinions to the strict test of enlarged experience and mature examination, and to add to the general stock of Medical information.

The arrangement which seems best adapted for accomplishing these objects, is to publish a Number every three months, and to divide each Number into three parts; to appropriate the first to *Original Communications*; the second to the *Critical Analysis of Medical Publications*; and the last to *Miscellaneous Intelligence on Medical Subjects*.

Under the *first division*, will be included Medical and Surgical histories and reflections—Discoveries in Anatomy, human, comparative, and morbid—Essays on interesting points of Physiology—Pathological observations—Remarks on well authenticated facts of Natural History and Chemistry, on subjects immediately connected with the causes and treatment of diseases, and the improvement of Pharmacy: And the Editors request their correspondents to direct their particular attention to the following inquiries:—To investigate the origin of diseases, to trace their changes and analogies, and to estimate the comparative advantages of different modes of treatment—To describe epidemic and endemic diseases in every part of the world—To observe all those circumstances which constitute Medical Topography—To investigate the effects of trades, manufactures and professions, on the health of those who exercise them—To study comparative pathology, and the diseases of the lower animals—

To analyse and record the different morbid appearances in the solid and fluid parts of animal bodies—To cultivate Medical Surgery—To improve the operations of Surgery, and to simplify its apparatus—To ascertain the effects of medicines on the several functions of the body, both in the state of health, and under various circumstances of disease—To examine the changes produced in their properties by various combinations, and the different preparations to which they are commonly subjected—To improve the processes of Pharmacy—To point out the application of the science of Medicine to the preservation of public health, and to the administration of justice—To record the cases in which medical opinions have influenced the latter, and to describe the measures adopted by the magistracy for securing the former—To indicate the means of supplying the poor most effectually with medical assistance, and of increasing the advantages derived from hospitals and dispensaries, by suggesting improvements in their construction and management—To propose regulations for suppressing quackery, and every other circumstance which may tend to diminish the utility and respectability of the Medical Profession;—In short, to examine every subject connected in any degree with the Philosophy of Medicine, which may make diseases the objects of rational inquiry and satisfactory explanation, and render our treatment of them active and correct, and to promote every investigation which may have any tendency to increase the advantages which the State derives from the science of Medicine.

In order to render this publication more varied and useful, and to prevent the admission of original communications of no merit, or foreign to the plan, the *second part* will be devoted to a Critical Analysis of the most important recent Medical Publications, both foreign and domestic. In the former department of this work, the Authors alone must be responsible for whatever is contained in their respective communications, while all that can be required of the Editors is judgement and impartiality in selection. In the present, however, the duties of editorship are so laborious, the responsibility so great, and its importance so undervalued, that
nothing

nothing but an ardent zeal for the promotion of Medical Science could induce them to dedicate to the account of medical literature any portion of their work, which might be so much more easily filled up by being less scrupulous in their choice of original communications. But the principal object of the Editors is utility; and they do not conceive that their exertions can be more usefully employed, than in giving an early and summary account of the publications connected with Medicine. These are, however, so numerous, and their merits so various, that it would be improper to pay the same attention to all. In selecting a part for detailed analysis, the Editors will be chiefly regulated by the importance of the subject, the excellence of the manner in which it is treated, and the rarity or expence of the work; and it is their wish rather to bring into notice real improvements, and to encourage diffident abilities, than to discover imperfections, and to expose errors. These, however, when sanctioned by high authority, and advanced with imposing confidence, it is the duty of the Editors to supply or correct; and, by thus combining judicious analysis with independent criticism, they hope to be able to render this department of their undertaking frequently interesting and original, always useful and instructive. ¶

The *third part* will be devoted to Medical News, Extracts from Correspondence, and Miscellaneous Intelligence on subjects connected with Medicine and Surgery. By means of an extensive correspondence, this portion of the Journal may be rendered extremely interesting. It may be the means of conveying the earliest information of important discoveries; of preserving observations and facts, which the authors themselves have not leisure to arrange or complete into regular essays; of conveying an account of the general state of health, by quarterly reports from hospitals, dispensaries, and extensive private practice; of submitting doubtful opinions, proposals, and questions, for candid and liberal discussion; in short, of directing the attention of the Profession at large to many interesting particulars, which might otherwise remain unnoticed.

The Editors enter upon this undertaking, actuated by a spirit of improvement, and a pure simple love of truth, free from partiality for any particular sect or system. They wish Medicine to be cultivated as a branch of natural history, and to be so improved. They wish discoveries to be made ; that facts of all tendencies be published ; that no hints should be suppressed, which may point out the tract of useful investigation, and may lead to useful conclusions.

THE

THE
EDINBURGH
MEDICAL AND SURGICAL JOURNAL.

PART I.
ORIGINAL COMMUNICATIONS.

I.

History of Three Cases of Erythema Mercuriale, with Observations.

By Thomas Spens, M. D. President of the Royal College of Physicians, and Physician to the Royal Infirmary of Edinburgh.

AN affection of the skin, of a particular nature, attended with pyrexia, and coming on during a course of mercury, is, I believe, by no means an unfrequent occurrence. In the course of my practice in the Royal Infirmary, I have met with five cases of this kind since the month of April 1803. But although the same disease must have fallen under the observation of other practitioners, no history of it, so far as I know, has yet been published.* This is the more surprising, as the symptoms attending it are often highly distressing, of long continuance, marked with striking peculiarities, and sometimes even so severe as to terminate fatally.

In all the cases I have seen, the patients had been exposed to cold, while the constitution was affected by mercury. Three of them were admitted with the disease upon them; and, in the other two, it came on while the patients were using mercury in the common wards of the Infirmary, which are not well adapted for the exhibition of that medicine: but the great number of patients who apply for admission, whose cases require mercury, and who cannot otherwise be cured, leaves no alternative.

The journals of two of these cases have been lost; but they, as well as that of Ann Harper, were comparatively slight, and of short duration. Two of the other were very remarkable; and I shall now

A 4

proceed

* Since the account of these cases was drawn up, two publications on this disease have appeared, by Dr Moriarty and Mr Alley.

proceed to give as distinct an account as I can of the three which have been preserved. But, though necessarily long, it is by no means so complete as I could have wished; as, in the first case, which was the only one I had an opportunity of observing from the beginning, the disease had made considerable progress before I was aware of the peculiarity of its nature.

CASE 1.

JOHN DONALDSON, a shoemaker, a stout young man of 23 years of age, was admitted into the Royal Infirmary on the 19th of March 1803, with a large bubo in his right groin, in which there was a slight sense of fluctuation. He had as yet taken no mercury, and was immediately put upon a course of the common ointment and pill, which, with the interruption of two days only, on account of pretty severe catarrhal symptoms, he continued until the 14th of April, by which time his mouth was considerably affected.

About eight or ten days after this, he began to complain of his groins and thighs being very itchy and painful, and of an eruption on his thighs. A bubo had also appeared in his left groin, which, as well as that in the right, had suppurated. They were both still open, but the sores which remained were inconsiderable. I imagined, therefore, that his distress was occasioned by a crop of pustules, so often the consequence of mercurial frictions, and did not at first examine the parts, but only recommended to him to change the place of rubbing.

On the 26th of April, he was feverish and very uneasy; and the pain and itchiness of his thighs and groins continuing very distressing, I examined them, and found a very copious red eruption, and general erythema, all over his thighs. The eruption was slightly elevated above the skin, and somewhat rough to the touch. It extended pretty generally over the lower extremities, and had also appeared on his arms and hands. In some places small vesicles were observed.

The Mercurial Medicines were stopped, a Saline Mixture was prescribed, and he was directed to take a tea spoonful of Sublimed Sulphur, morning and evening, as his belly was rather slow.

April 28. The erythema has extended over his arms, and the eruption over the greater part of his body. An exudation, of a serous, yellowish fluid, has also taken place, particularly from the inside of his thighs, groins, and contiguous parts, which, when dry, stiffens his linen.

In a few days the erythema had extended over his whole skin, which was every where very painful, somewhat swelled, and most distressingly itchy, attended with considerable desquamation of the cuticle. The exudation became more general, frequent and copious; the smell which issued from him was peculiar, and very offensive. He was much debilitated. Pulse 120, and rather feeble. He had almost entirely lost his appetite, and was very thirsty; but his tongue was clean and moist, and continued so during the whole course of the disease.

A weak solution of Acetite of Lead was applied to his groins, and to the inside of his thighs, and the Unguentum Sulphuris to his arms; but neither of them being productive of any benefit, they were soon discontinued. The warm bath was twice tried, and he felt it very agreeable; but the relief it afforded being only temporary, it having nearly induced syncope, and the bath being situated in a distant part of the house, it was not repeated.

May 4. He got half a drachm of the powder of Cinchona four times a day, drink acidulated with Sulphuric Acid, and a bottle of Scots porter daily.

— 5. He has been troubled with diarrhœa since yesterday, but feels rather easier. Pulse 100. Considerable thirst. The cuticle begins to come off in large portions. The discharge is attended with a most unpleasant and peculiar odour. The trunk of his body, and extremities, but particularly his feet, are somewhat swelled, and he complains of soreness and a sense of swelling in his mouth.

The sulphur and acidulated drink were omitted. He was directed to take half a drachm of powder of Cinchona, to which six drops of Tincture of Opium were added, six times a day; and he got a draught with thirty drops of Tincture of Opium at bed-time.

— 6. The exudation was more general and copious last night than it has yet been, attended with much itching. The swelling of the body and extremities continues. Pulse 100. Diarrhœa has not returned. Thirst abated. But the smell from the discharge has become very offensive, and he is frequently troubled with nausea.

The treatment was continued, except that the Tincture of Opium was not added to the Cinchona; and he was allowed ten ounces of Toddy (Aq. Cardiaca *) daily.

— 7. Swelling of the face so considerable this morning when he awoke, as nearly to close his eyes. The cuticle begins

to

* Aq. Cardiac, *Nosoc. Edin.*

℞ Alcoholis diluti ℥ xxvi.

Aquæ Fontanæ lb iv.

Sacch. purif. ℥ iij ss. M.

to peel off in portions of very considerable size, especially from his hands. His feet are still more swelled, and of a deeper red colour. He feels still more uneasy to-day, and the smell is more disagreeable. Pulse 96, but varies to 120.

Instead of the powder of Cinchona, he was directed to take an ounce of the Aromatic Mixture of Cinchona * every second hour, and his toddy was increased to a pint daily.

May 8. The erythema continues almost general, the pain and itchiness very distressing, the exudations very profuse, and the fœtor exceedingly offensive. The lips and eyelids are more swelled, and the tarfi and eyes are considerably inflamed. Pulse 112. He is still very weak; but has had a pretty good night, and feels some return of appetite. His medicines were ordered to be repeated, and a decoction of Galls to be applied to some parts of his skin with a sponge. He also got a weak solution of Acetite of Lead as a collyrium.

— 9. The astringent decoction at first lessened the pain and itchiness, but he thought that it rather increased his uneasiness, and I believe the use of it was soon laid aside. The exudation which had taken place on the fore part of his breast, belly, and extremities, is also coming from his face to-day, which is more swelled; and there is considerable desquamation from his shoulders and back.

— 10. Continues in great distress. Pulse varies from 100 to 120. Copious exudation from the breast. Considerable desquamation from the face.

He was allowed twelve ounces of Port Wine instead of the Toddy.

— 11. Continues nearly in the same state. Exudation very general. Desquamation begins to extend to the hairy scalp.

His medicines were continued; but he was directed to get forty drops of Tincture of Opium in his evening draught, and his allowance of Port was increased to twenty ounces. He was also desired to take a tea spoonful of Sulphuric Acid Mixture † in a glass of water, when thirsty.

May

* Mist. Cinchonæ Aromaticæ Nosoc. Edin.

℞ Pulv. Cort. Cinchonæ ʒ ss.

Mucilag. Mimos. Nilot. ʒ ij.

Tere et paulatim adde,

Aquæ Fontanæ ʒ v.

Tincturæ Lauri Cassiæ ʒ i.

† Mist. Acidi Sulphurici Nosocomii Edinensis.

℞ Acidi Sulphurici diluti ʒ ij.

Syrupi communis ʒ vi. M.

May 12. He has had a tolerable night, and feels easy at present. Belly regular. Appetite improving. His medicines were continued. He got an increased allowance of bread, and two pounds of beef-tea to dinner.

— 13. His back is very itchy at present, and he says this symptom usually precedes the exudations, which however have been rather less frequent for several days; but his skin continues very painful, the factor very strong, and large portions of the cuticle are falling off. He is still occasionally distressed with nausea. Pulse 112.

— 15. Some swelling was observable last night in many places where the cuticle had peeled off. The newly formed cuticle cracked during the night, and a considerable exudation succeeded. His eyes are still inflamed, and very sensible to light. His feet are less swelled. Complains much of thirst, and frequent sickness at stomach. Pulse from 112 to 120, and he is very uneasy.

— 17. Exudation diminished; but his skin is still very painful, and his feet and hands much swelled. Belly rather loose. Pulse 112. Appetite tolerable.

— 19. He has had a more restless night, and the exudation has again become more profuse. Belly loose. Appetite good.

His medicines were continued, and he was ordered to take half an ounce of Infusion of Catechu after every loose stool.

— 21. Exudation very profuse. Belly still loose.

— 22. He has been very uneasy since yesterday. The swelling of his hands is nearly gone; that of his feet continues; and the newly formed cuticle is coming off the lower extremities in pretty large portions. Pulse 120, and weak. Much thirst. Appetite tolerable. Belly regular.

— 23. The exudation has become less, and he is considerably easier. Pulse 108, and firmer.

— 25. Skin has become more painful, and the exudation more considerable. Has had some catarrhal symptoms for these two last days. Considerable thirst. Belly regular. Pulse 112.

— 27. Exudation much diminished. Cough less troublesome.

— 30. Exudation nearly gone, except from the back of his head; but his skin is still itchy, and very painful, especially when he moves; he says, that it feels as if 'his flesh was cracking in pieces.' His eyes continue painful, and the bark mixture produces nausea. Pulse varies from 100 to 120. Tongue clean. Belly regular.

His medicines were continued, with the exception of the Bark Mixture,

May

May 31. Skin more painful. Still loathes the bark mixture ; but he was desired to take as much of it as his stomach would bear. Pulse 120.

June 2. Eyes rather better. There has been some exudation for the two last days, with restless nights and frequent nausea. Pulse 116. Belly regular.

Medicines continued ; but the Tincture of Opium in his evening draught increased to fifty drops.

— 3. Had a good night. Less pain and itchiness of skin to-day, but some exudation. Pulse 110. Appetite good.

— 4. Some flushing of his face, and increased redness of the trunk and extremities. Some exudation from different parts. Pulse 110, and strong.

— 5. Has had a sleepless night. Face still flushed, and eyes again more painful, with swollen inverted tarsi. Redness of his trunk and extremities, pain and itchiness, diminished. Exudation more general ; and there is a discharge of purulent matter from his hams. Pulse 120. Much thirst. Appetite good.

— 7. Exudation chiefly from his back. Pulse 106. Belly slow. Much thirst.

— 8. The state of his skin still occasions considerable uneasiness ; and there is some exudation from the back of his head, from which the hair is falling off.

The Cinchona mixture was discontinued. The other medicines were repeated, and he was allowed a pound of Port daily. The Linim. Aq. Calcis was ordered to be rubbed on his thighs, and he was desired to take one Mercurial Pill every morning and evening.

— 9. Feels much relief from the use of the Liniment ; had a tolerable night, and is in general much easier.

The treatment was continued, except that the Liniment was directed to be applied to his whole body.

— 10. Has had a quiet night, though without much sleep. Pulse 100. Appetite good. Belly regular. There are two small tumours, one on the left breast towards the sternum, the other on the lumbar region of the same side, which seem to contain a fluid, and are of a darker colour than the rest of the skin, but are very little painful. A common poultice was applied to them.

— 11. Still feels much relief from the application of the liniment. His skin is much better, the itchiness much less troublesome, and the smell much less offensive. Pulse 104. Belly regular.

— 12. Was rather restless during the night ; but his skin continues easier. Since last visit, has had at times partial flushings of

of his face, and temporary sensations of heat in different parts of his body, which went off with very slight exudation. Pulse 88, and firm. Has so far recovered as to be able to feed himself, which, from the pain occasioned by motion, he had been incapable of for a long time. Belly somewhat griped.

June 15. His skin in general has now assumed a much more natural appearance; but his face is at present considerably flushed, and he complains of slight headach, and of general restlessness. Pulse 120. Tongue clean, but rather dry. Thirst considerable. Belly regular. Appetite good.

— 16. Is much easier to-day. Pulse 100. Tongue clean and moist.

— 17. Has at times felt a considerable degree of itchiness on the inside of his thighs; and his gums are slightly affected.

Medicines continued; but he was desired to take only one Mercurial Pill daily.

— 20. Pulse 104, and firm. Continues better, and regains strength. Skin still itchy at times, but continues much less painful. Appetite good.

— 22. The tumours on his side suppurated, and are now quite healed.

The Mercurial Pills were discontinued altogether. His other medicines were repeated.

— 25. His skin continues much cleaner, and less itchy and less painful; but his face is still somewhat swelled, and his eyes tender. Pulse 90. Finds himself much stronger.

— 28. His medicines and wine were continued, and he was desired to take half a drachm of powder of Cinchona six times a day.

July 4. Skin, in most places, appears to be in a healthy state; but his feet are very tender. Has still occasional attacks of itchiness, which are only succeeded by flushing, and a sensation of heat.

The Cinchona powder was diminished to half a drachm four times a day, the Wine to ten ounces daily, and the Tincture of Opium in his evening draught to thirty-five drops. He was also ordered twenty drops of Antimonial Wine three times a day.

— 7. The Cinchona and Wine were discontinued; and he was ordered to have a bit of beef daily to dinner.

The soles of his feet continued so tender for many weeks, that he could hardly put them to the ground; on which account, he remained in the Hospital for a considerable time after he was quite well in every other respect.

CASE 2.

ANN HARPER, a serjeant's wife, about 36 years of age, was admitted into the Royal Infirmary on the 18th of August 1803. The account she gave of herself was, that about three weeks before, the whole surface of her body had become hot and itchy, with swelling and inflammation of the integuments, most considerable on the face and eyelids. These symptoms were preceded and accompanied with alternate cold and hot fits, languor, prostration of strength, loss of appetite, thirst and watchfulness. She continued in this state for fourteen days, when a scarlet eruption appeared over the whole cuticle; particularly on the inside of her arms, thighs, and legs; attended with an exudation, which was greatest from the groins and thighs, and with a disagreeable smell. In a few days the eruption became dry and white; and afterwards, the cuticle peeling off, and leaving the cutis vera itchy and tender, the new cuticle became affected in the same way as the former.

The febrile symptoms still continue. Pulse 118. Tongue white. Thirsty. Belly and Catam. regular.

Three days before she was taken ill, she had rubbed in a small quantity of mercurial ointment on her groins, and upon some hæmorrhoidal tumours. On the fourth day she felt her groins somewhat painful, and was the same day exposed to cold and wet, immediately after which her complaints came on. Lime water was directed to be applied to one side, and the Liniment. Aq. Calc. to the other. She got half a drachm of powder of Cinchona four times a day, and drink acidulated with Sulphuric Acid.

Aug. 19. There has been less exudation, but her skin is still hot, and the smell from her thighs and groins, the parts most affected, is very disagreeable. Pulse 112. Belly slow. Complains much of want of sleep. She got a bolus composed of half a drachm of Lenitive Electuary, and a drachm of Sublimed Sulphur; and a draught was ordered at night, with twenty-five drops of Tincture of Opium, and thirty drops of Antimonial Wine.

— 20. Slept well. Belly regular. Exudation from the groins and thighs diminished. Appetite improved. Thirst somewhat abated. Tongue clean. Pulse 100.

— 29. Eruption has been going off for some days past, and her skin is now every where dry. Considerable œdema of lower extremities. Febrile symptoms nearly gone. Belly regular. She was desired to take a drachm of Super-Tartrate of Potash three times a day.

Sept. 12. She was dismissed cured.

CASE 3.

JAMES FRASER, a soldier belonging to the 6th Royal Garrison Battalion, æt. 32, was admitted into the Infirmary on the 23d of February 1804. The following history of his case was made out by my clerk Dr John Veitch.

The cuticle over his whole body is in a state of desquamation, adhering only in large, white, dry scales: that of the soles of his feet is in one loose cake. The lower integuments are swelled and inflamed; in some parts very itchy, in others deprived of feeling, but in most places very painful. There is a copious viscid exudation from the axillæ, groins and perinæum, which is very acrid, and has a strong, fishy smell. It soon hardens and forms incrustations, which causes great uneasiness to the inflamed and tender skin. From the thickened state of the integuments the lips and palpebræ are very stiff. The eyes are somewhat inflamed, and there is a considerable discharge of tears, and also of a white glary matter from them and the eyelids. Pulse 100. Temp. 98. Tongue and fauces dry. Has very little appetite, and constant thirst. Belly rather slow. Urine scanty and high coloured. He is much debilitated, and is prevented from sleeping by the uneasiness occasioned by lying.

On the 7th of January last, a small chancre appeared on the prepuce. On the 14th he was put upon a course of mercury in the form of unctio, and on the 28th of the same month his mouth was considerably affected.

The weather at that time becoming suddenly much colder, and in consequence of exposure to it, he was seized with rigors, headache, nausea, and great prostration of strength. Soon after this he felt his thighs itchy, and on the 30th, the febrile symptoms continuing, the itchiness spread over his whole body, accompanied with a red eruption and general erythema. The mercury was continued till the 2d of February. At this time a very profuse exudation took place from the whole surface of his body, with desquamation of the cuticle.

The exudation continued almost constant till the 16th instant; and sometimes, after a short sleep, he was surprised to find the bed-clothes drenched, while his skin appeared dry. Since the 16th the exudations have been chiefly from the axillæ, groins, and perinæum, with the other symptoms as above described. He has taken a considerable quantity both of Cinchona and of Wine.

Let him have drink acidulated with Sulphuric Acid, at pleasure; and let the parts of his skin most affected be rubbed with Linim. Aq. Calcis.

Feb.

Feb. 24. Has had some sleep at intervals. Pulse 100. The exudation continues from the arm-pits and groins, and has been more profuse from the perinæum. Feels much relief from the application of the Liniment.

Habt. Haust. Anod. Antim. h. f. Cont. alia.

— 25. Has slept better. Thirst somewhat abated, and his appetite is rather better; but his skin continues very painful, the exudations frequent, and the fœtor strong.

Cont. med. et Habt. Mist. Cinch. $\frac{3}{4}$ i. quater in die.

— 27. Has had a good night, and a very copious fetid stool by injection. Has taken his breakfast well. Exudation and painful state of the skin continue, and the fœtor which proceeds from him is most excessively offensive.

Cont. med. Rept. enema pro re nat. et Habt. Aq. Card. $\frac{3}{4}$ viii.

— 29. Continues to have tolerable nights, and to take his food pretty well; but he is still very weak, is hardly able to give himself the least assistance, and his complaints are very distressing.

Cont. med. et Habt. Mist Cinch. $\frac{3}{4}$ i. sexies in die.

March 1. Both exudation and fœtor considerably diminished, and skin less painful. Continue.

— 5. Exudation and fœtor continue to decrease.

— 11. No exudation for several days. Fœtor gone. Skin nearly of a natural appearance every where, only redder than common. Tongue clean and moist. Appetite good. Belly regular. Cont. and let him have a bit of beef daily to dinner.

— 15. Some return of exudation since last night.

Rept. Liniment. Aq. Calc. et Mist. Cinch. ad $\frac{3}{4}$ i. 2da q. q. h. et alia ut antea.

— 17. Skin again in a very painful state, exudation much increased, and the fœtor so strong as in general to occasion nausea and vomiting on remaining near him a very short time.

— 21. Feels somewhat easier to-day, though he did not sleep well last night.

Fiat haust. cum Tinct. Opii gtt. xl. Cont. alia ut antea.

— 23. Continues in great distress, exudations frequent, and fœtor exceedingly strong. A trial has been made of a decoction of galls; but he thought it made the parts more uneasy to which it was applied.

— 24. Skin continues very painful, and other symptoms as yesterday.

Omitt. Mist. Cinch. et Habt. pulv. Sulph. Alum. Comp. $\frac{3}{4}$ i. quater in die. Fiat haust. cum Tinct. Opii gtt. lx.

— 25. Asperget cut. Farina Tritic. Cont. alia.

— 26. Finds relief from the application of the flour. Has had several loose, very fetid stools.

Omitt.

Omitt. Pulv. Cont. alia, et utat. Pot. Cretac.

March 27. Diarrhæa still pretty frequent, but stools less fetid. Other symptoms continue unabated.

Habt. Inf. Cat. Theb. $\frac{3}{4}$ ss. post sing. sell. liq. Omitt. Pot. Cret. Cont. alia.

He had been all along in a room of the Fever Ward, in which there was a fire, as he in general had felt very chilly. But the nurses of that ward being very much exhausted by the great number of patients at that time in it, and particularly by the loathsome attendance on poor Fraser, (for he could not even feed himself); and the convalescents who were at the fireside being also much distressed with the sœtor, he was this day carried to a room in the Soldiers' Ward; and, though very weak, he did not seem at all fatigued by the removal, but felt much comfort from a complete change of bedding, which had very frequently before been necessary. Some excoriation was observed on his back from lying.

— 28. Diarrhæa gone. Exudation still copious; sœtor very strong, and skin in general very painful.

Rept. Mist. Cinch. ad $\frac{3}{4}$ i. quarta q. q. h. Cont. Haustu.

— 29. Loathes his food, and is becoming weaker.

— 31. Died this morning.



Although, in all these cases, the disease seemed to be produced by exposure to cold, while the system was under the influence of Mercury, yet as its occurrence is infinitely too rare to be the necessary consequence of causes so common, something more, probably a peculiarity of constitution, is necessary for its production. This is rendered more probable from its appearance in Ann Harper, who had used so very small a quantity of Mercury. It may also be remarked, that though the Mercury had been principally exhibited in the form of unction with the common ointment, except in the case of Donaldson, who also got the common pills, and with whom I believe an ointment composed of one part of grey oxyde of Mercury, and three parts of Axunge, was substituted for the common Mercurial Ointment, yet I am disposed to think that the disease would have been produced, in whatever form the Mercury had been exhibited, or by whatever preparation of it the system had been affected. The disease was probably aggravated in both the cases of Donaldson and Fraser, by the frictions having been continued several days after the eruption and febrile symptoms had appeared. But I am at a loss to account for the relapse of Fraser on the 15th of March.

The exhibition of Mercury again on the 8th of June, in the case of Donaldson, though in small quantity, may be thought to have been rather a rash prescription. But I had several reasons for doing so. I was doubtful of the original disease being completely cured; he had regained a good deal of strength; the cutaneous disease was much abated; the weather was warm; and I had a wish to ascertain whether the internal use of Mercury alone would have any effect in reproducing the disease. At the same time, its effects were carefully watched; and I was determined to stop immediately, if he should grow more uneasy. The *Linimentum Aquæ Calcis* was prescribed at the same time with the Mercurial Pills; and from whatever cause it proceeded, the disease of the skin certainly decreased more quickly from that period. He had some accession of fever on the 15th of June, which disappeared before next day. But on the 17th, the itchiness of his thighs, which seems to be in general the first symptom of the disease, having again become more considerable, I reduced the quantity of Mercury to one pill daily; and on the 22d of June, his recovery going on well, I discontinued the pills altogether, as I saw no necessity for continuing their use any longer.

What degree of merit the remedies employed are entitled to, in assisting nature in the cure of Donaldson, and in removing the disease for a time in the case of Fraser, I shall not pretend to say. In both of them, the disease continued about a month, before any symptoms of abatement appeared. But it seems highly probable, that discontinuing the use of Mercury as soon as the first symptoms shew themselves, and the employment of the warm-bath and some gentle diaphoretics, together with laxatives, would check the progress of this violent disease; and, when fully formed, I would again adopt the same method of treatment, until experience shall point out one more efficacious.

I have been informed by Dr Duncan junior, that he met with a slight case of this eruption in private practice, in a girl about nine years of age, who had taken a few powders with Calomel as an alterative, and in whom no symptoms appeared of the constitution being under the influence of Mercury. It commenced with considerable redness and swelling of the face, which were ascribed to irritation from the application of a little *Ungt. Oxidi Hydrargyri Rubri* to the tarsi, which were affected with scrophulous inflammation. It extended only over the face, neck, shoulders, and upper part of the back, and terminated in a serous exudation and desquamation of the cuticle, exactly resembling

bling what he saw in the case of Donaldson in the Hospital, but infinitely less severe.

P. S. Since the preceding account of these Cases was written, I have seen Mr Alley's publication. His cases, in general, correspond with mine; although I must confess that I was not sensible of the progress of the fever being so regular and marked as he has described it. In my opinion, many more facts and observations must be collected, before we shall be able to give an accurate and complete history of the disease, or even to ascertain the place which it should occupy in a system of Nosology. Mr Alley objects to its being called *Lepa* or *Erythema Mercuriale*, and proposes to denominate it the *Mercurial Disease*. But besides that this appellation conveys no idea of the nature of the complaint, there are other very severe and less uncommon affections occasioned by the use of Mercury, such as the *Mercurial Sore Mouth*, and *Erethismus Mercurialis*, which are at least equally entitled to the name of *Mercurial Disease*.

I am also happy to observe, that the mode of treatment, which analogy suggested to me, coincided so nearly with that which the greater experience of the Dublin practitioners found most beneficial. The external applications, however, from which my patients seemed to derive the greatest benefit were, *Lime-water*, *Linim. Aquæ Calcis*, and *Flour*.

Although I have frequently of late consulted Mr Benjamin Bell's excellent Treatise on the Venereal Disease, it is some years since I read the work; and I had no recollection of his having noticed this effect of Mercury. This, however, I now find he has most distinctly done; although, from the manner in which he speaks of it, the cases he had at that time seen, could not have been of the severe nature of those of Donaldson and Fraser. As the passage seems also to have escaped the notice of the Dublin practitioners, is not very long, and is an important addition to the literature of the disease, it will be proper to quote it.

'It is not an uncommon effect of Mercury to excite an eruption upon the surface of the body. In some, this appears as a miliary rash, somewhat resembling measles; while, in others, it is considerably elevated, and seems to be produced by a serous effusion between the cutis and scarf skin. In some, the eruption is partial, being confined to particular spots; while, in others, it prevails generally over the whole body.

'This eruption, or efflorescence, is not attended with pain; but, the heat and itchiness which accompany it are in some instances so distressful, that it keeps the patient at all times very uneasy, and deprives him entirely of rest.

' The remedies which I have found to answer best are, the internal use of opiates, conjoined with the application of flour or starch-powder to the parts affected. The skin is kept sufficiently cool and easy by one or other of these powders being from time to time freely applied to the eruption; and, by a proper exhibition of opiates, we secure rest during the night. In some instances, however, we are obliged to avoid the use of opiates; for although they may answer the purpose of procuring sleep, they tend evidently to increase the heat and itchiness of the eruption. We find, indeed, that in some constitutions Opium excites an uneasy itchy sensation over the whole body, even where no eruption has previously taken place; and it is perhaps with such patients only that it cannot be employed in the treatment of this eruption.

' The eruption to which I allude, appears to arise entirely from the effect of the Mercury upon the system; but it does not seem to depend upon any particular preparation of the remedy. It takes place indiscriminately from all of them; and not more readily from unction, than from those preparations that are used internally.' *

II.

Two Cases of Tumours in the Pelvis growing out of the Sacro-sciatic Ligament, one of which terminated fatally, and the other was cured by extracting the Tumour through an incision made into the cavity of the Pelvis through the Perinaum. By P. P. Drew, M. D. Fermoy, County of Cork.

MRS SHAW of Kilworth, aged 37, mother of six children, labours under a large tumour, occupying the whole cavity of the pelvis; which appears, on touching it, like the head of an infant in the last stage of delivery. It has more the feeling of an ossification or monstrous node, than of a fleshy substance, and seems to adhere firmly to the right side. There is no possibility of passing more than one finger between it and the pelvis, and therefore no reaching the os tincæ. It does not project below the inferior brim of the pelvis; but the labium of that side is considerably thickened, and protruded before it, similar to the child's scalp, when the perinean tumour is formed.

About five years ago she was delivered of her last child, had an easy and natural labour, and, until the beginning of May, enjoyed

* A Treatise on Gonorrhœa Virulenta and Lues Venerea. By Benjamin Bell, Vol. II. p. 228.

joyed perfectly good health: then first she perceived a sense of weight and obstruction in the vagina, and some diminution of sensibility in her right leg and thigh, which was particularly distressing when in the horizontal posture, and frequently obliged her to get up at night and walk about the room.

July 20. 1802. She was seized with a suppression of urine, which induced her to send for me. She told me she was often afflicted with that symptom; but, on taking a cathartic, it was always removed, and that she had taken one now without that effect. On applying my hand to the region of the bladder, I distinctly perceived it very much distended. I therefore enjoined the necessity of employing the catheter. On introducing it, I discovered the tumour above described. At first I apprehended it might have been a retroversion of the uterus; but, on attentive examination, I found it was not the case. I met with great difficulty in passing the catheter. It required much pressure on the tumour, it was so hard and so firmly wedged in the pelvis. I drew off about six pounds of urine, which gave instant relief. The evacuation of *feces* was not as yet impeded, the rectum being protected from compression, as it runs down in the opposite side of the pelvis, from which the tumour grew. Being surprised at the novelty of the case, I requested that Dr Pigott, who attended her before, and lived in town, should be sent for, and he accordingly came. The result of our consultation was, that the removal of the tumour would be attended with imminent danger, as we supposed it connected with the large vessels on the inside of the pelvis, an hæmorrhage from which could not be restrained. We therefore left her to her fate, and procured her a flexible catheter, which I shewed her maid how to introduce.

Nov. 20. 1802. I was again consulted, on account of the appearance of matter proceeding from the vagina, which induced her to suspect that the tumour had suppurated; but, on examination, I found it had not done so, and that no change had taken place, except that it was much more enlarged, and that it was more difficult to pass the catheter.

Feb. 20. 1803. The tumour was now so much increased as to obstruct completely the discharge of both *feces* and urine. The woman found it impossible to introduce the catheter. I was from home, and no relief could be obtained. The abdomen now became very much distended. The exhalation from the body had an urinous smell. The agony and pain she endured cannot be described. She grew delirious, and dreadful convulsions terminated her sufferings.

On hearing of her death, I applied for permission to open the body; and, thanks to her friends, they readily consented; for my

success in a similar case was owing to the knowledge I acquired in this.

History of the Dissection.

I laid open the abdomen by a crucial incision, cut through the symphysis pubis, divided the os innominatum from its connexion with the os sacrum, and removed the left limb. Now appeared in view the rectum compressed. The sigmoid flexure of the colon much distended with hardened fæces. The bladder, above the brim of the pelvis, stretched out to the size of a gravid uterus, containing at least a gallon of urine. The uterus and its ligaments were in a natural and perfect state. I now removed the vagina and rectum from over the tumour, which I separated from the side of the pelvis and sacrum with my hand alone (that is, without the assistance of the knife), till I came to the sacro-sciatic notch, where I found it firmly fixed, growing out of the sacro-sciatic ligament by a strong root, of a hard, gristly nature; and having cut through this, the tumour came away, like an almond blanching from its skin, so very slightly was it attached to the parts that surrounded it.

The tumour was perfectly round, about sixteen inches in circumference, of a fat, gristly substance, without any appearance of circulation in it. No artery entering it. No vein proceeding from it. Unconnected with the arteries which run down from the internal iliacs to supply the contents of the pelvis. It seemed the production of the ligament alone,

Quere—Could not an incision have been made at one side of the perinæum and anus, backwards, towards the os coccygis, and the root of the tumour proceeding from the sacro-sciatic ligament, be come at, and cut through? And as it was so easy to detach it from the contents of the pelvis, might not it have been without much difficulty removed? Should any artery in the neighbourhood of the perinæum be cut, it could easily be taken up; and as the tumour itself received no branch from the internal arteries of the pelvis, the hæmorrhage, in all probability, would not be great.

This query I laid before Dr Gibbons and Dr Bullen, two eminent medical friends of mine in Cork, who attended her before I saw her, and at that time justly thought her case incurable; and, even after reading the above history of the dissection, they considered an operation too hazardous, and the extraction of the tumour, from its great bulk, impracticable, through any incision that could be made, independent of the risk of immediate death from hæmorrhage. But my success in the following case, should a similar

lar one ever occur to any practitioner, will convince him, I hope, that no great danger or difficulty is to be apprehended.

Aug. 26. 1803. I was called on to Mrs M—— of Lismore. She had been two days in labour before I saw her, and was attended by Dr Power, Dr Hannan, and Mr Pack, surgeon to the 41st regiment of foot. Those gentlemen were puzzled at the presentation; and so I should have been, had I not met with the preceding case. It was exactly the same. The tumour grew out of the right side, and occupied the whole cavity of the pelvis so completely, as to admit of passing only one finger between it and the pubes, by which I could scarcely reach the head of the child. She said she had, for some months back, laboured under dysuria, so that the catheter had been employed by a surgeon who attended her, and who attributed that affection to her state of pregnancy, supposing it to arise from the pressure of the gravid womb; that she had lately acquired the knack of pressing on the tumour with her finger, which enabled her to make urine without assistance.

Being convinced of the nature of the case, I related that of Mrs Shaw, and represented the possibility of removing the tumour, with a prospect of success, at least with more than would attend the Cæsarian section. Embryulcia was out of the question; it could not be performed; there was no room to extract the child; and, if it had been practicable, since the mother's life could be prolonged for a short time only, it involved in it a crime; and to leave our patient undelivered, was cruel and unprofessional. They therefore willingly consented to the operation proposed.

Having laid my patient on a table, in the posture of operating for lithotomy, my assisting friends holding each a knee, and the midwife the shoulders, I made my incision by the right side of the perinæum and anus towards the os coccygis, and with the second stroke of the scalpel brought the tumour into view. I passed my finger before and behind its root, which I easily divided with the knife, introduced my hand, and detached it from the side of the pelvis; withdrew that hand, and introduced the other, by which I separated it with equal facility from the vagina and rectum, and, to their great pleasure and surprise, brought it away. A gush of blood now took place. I crammed in a sponge, which instantly checked it. An artery near the perinæum spouted. This I laid my finger on, and could, if necessary, in an instant have taken up; but all hæmorrhage completely ceased. We now turned our attention towards the support of our patient; assured her all dan-

ger was over. No fainting occurred; her pulse was sufficiently distinct and strong. We administered a little wine; but the best of cordials was the great pleasure and satisfaction she saw in the countenances of us all. A labour pain now came on, succeeded by another, and another; the head descended into the cavity of the pelvis; the sponge was protruded from the wound. We retained her for an hour on the table, expecting she would soon be delivered; but finding her labour grow tedious, we removed her into bed. Here we trusted to the efforts of nature for six hours. Finding the child was presenting with its face towards the os pubis, and apprehensive of her wanting strength, I applied the forceps, and delivered her of a living child, which has since continued well. The placenta came down into the vagina, and was easily removed. No hæmorrhage took place. Four stitches were passed through the lips of the wound, and a large sponge was thrust into the vulva, to keep the sides of the cavity which contained the tumour in contact, and all the other requisite arrangements and comforts were employed. We waited on her in the evening; found her as well as we could wish; drew off about half a pound of urine with the catheter, for the sponge prevented her from making it herself; left her to her repose, and next morning visited her again. She slept well, and complained of little pain from the wound. We drew off her urine, and removed the sponge from the vagina, which I washed out with a syringe, and found completely free from any injury or ulceration; replaced the sponge, and dressed the wound with a pledget and T bandage.

Aug. 28. An enema was administered yesterday morning, without effect. Some castor oil was given in the evening, which produced rather too many evacuations; but no bad symptom took place. We removed the sponge from the vagina, and found the space which the tumour had occupied completely obliterated. But two of the stitches had given way, and left the lips in part separated. The sponge was now omitted, the lips brought together again with a strip of adhesive plaster. An anodyne was prescribed, to check the catharsis, and two scruples of bark to be taken three times in the day. Here our reports ended, as no unfavourable symptom occurred. I visited her for the last time on the 29th, and found her able to suckle her child; both completely well, the wound perfectly healed, without a vestige of any ill consequence from the operation. Mrs M—— is a slender and delicate woman, aged about twenty, and married twelve months; had once before marriage some slight suppression of urine, but attended with no pain. The tumour measures fourteen inches in circumference, weighs about two pounds eight ounces, and is of the same nature and consistence with that found in Mrs Shaw.

As the above cases are very uncommon—as the operation was attended with unexpected and signal success, and the cure complete—and since many of the Profession are inclined to discredit such cases, it may not be amiss to subjoin the testimony of those who were present. I have therefore obtained the signatures of Dr Power, Dr Hannan, and Mr Pack.

Present—

ALEX. POWER, M. D.

DENNIS HANNAN, M. D.

PIERCE PACK, Chir.

PASCAL PAOLI DREW, M. D.

et Chir. necnon Soc. Reg.

Med. Edin. Soc. Exord.

III.

On the Treatment of Chorea Sancti Viti, by Purgatives. By John Mc'Mullin, Member of the Royal Medical Society of Edinburgh.

Few circumstances have contributed more to retard the progress of the healing art than premature generalization. Our opinions are often derived from the consideration of insulated facts, which have accidentally made a strong impression on our minds. The partial views thus obtained, from our impatience to arrive at general principles, we immediately assume as the basis of a system which we believe to be incontrovertible; because, with unconscious partiality, we exaggerate the importance of every argument which seems to support it, and neglect or distrust every fact with which it is incompatible.

Thus, having observed that many diseases of general debility are removed by tonics, and increased by evacuations of every kind, we have hastily concluded, that in all diseases where debility is present, evacuations are to be avoided; and that tonics are the only means from which a cure is to be expected. What has been the consequence? Many diseases of symptomatic debility, which have resisted the use of tonics, have either been considered as incurable, or our failure has been ascribed, not to our pursuing an erroneous method of treatment, but to our means having been too feeble, or employed too late; and, obstinately persisting in the tonic plan on each succeeding occasion, we push it with greater vigour, and with the same want of success. There are, however, fortunately, practitioners who act more philosophically, and, regarding with distrust theories which do not stand the test of experience, endeavour to advance the science of medicine by the
flow

slow but sure method of observation and induction. It is in this way that we sometimes find a disease yielding to a plan of treatment diametrically opposite to that which the established opinions concerning its nature would have suggested. Whenever successful experiments of this kind occur, whether they have been the effect of chance or the result of accurate investigation, it is of importance that they be rendered as public as possible, with the view of alleviating the sufferings of those labouring under similar complaints, and of correcting the erroneous ideas entertained of the nature of the disease, so that at last a better and more certain method of cure may be established. It is from these considerations, chiefly, that I am induced to publish some observations which occurred to me in consequence of having witnessed the cure of some cases of Chorea Sancti Viti in the Royal Infirmary of this place. In these cases, a mode of treatment was adopted, which no opinion of the disease, hitherto published, seemed to authorise; although, in every instance, it was attended with the most marked advantages. This treatment consisted in the repeated frequent exhibition of drastic purgatives, which will appear, on perusing the following cases, not to have had the effect of debilitating still more, an apparently debilitated system; but, on the contrary, during their employment, the patients recovered strength, the involuntary motions gradually abated, and, by persisting in this treatment for a short time, a perfect cure was effected. What is particularly worthy of observation, is the appearance of the alvine discharge, which, in every instance, was black and fetid. The first four cases were treated by cathartics solely; in the last case some tonics were used, but not until the cure was nearly completed by the purgative plan. It is however to be observed, that the tonics were not given with a view to obviate any debility which might arise in consequence of the cathartics employed; for the patient was at that time much stronger than before admission.

The first case was that of

WILLIAM SINCLAIR, æt. 10, admitted August 2d 1802, affected with irregular involuntary motions of the superior extremities, and occasionally with a diseased action of the muscles of the face, producing great distortion in the expression of the features, attended with flushing in the face, pain in the occiput, and difficult articulation. Although he cannot stand erect without being supported, he yet possesses in some measure the command over the inferior extremities, and was observed, before this took place, to drag one leg after the other. He seems much debilitated. Belly somewhat tense and tumid. Pulse about 90; rather feeble. Appetite impaired. Belly regular; but the stools in small quantity. He was taken ill a fortnight before admission, and within these

these few days the symptoms have become worse. Has used no remedies.

Aug. 3. ℞ Sub-Mur. Hydr. gr. iij.

Pulv. Jalap. gr. x.

Fiat pulvis primo mane sumendus.

— 5. The stools of yesterday and this morning are copious, and of natural appearance. Belly is less tense. Pulse calm. Irregular motions and pain of occiput continue, but he walks with more steadiness.

Cras Repr. Pulv. e Sub-Mur. Hydr. cum Jalap.

— 6. One feculent stool since morning. Headach and irregular motions nearly the same. His step is still more steady and firm.

— 8. Has continued convalescent. Dismissed cured.

Habt. secum Sub-Mur. Hydr. gr. x.

Sach. ℥ ii. intime misceantur. Tritura et divide in dos. viij. One every night.

ELIZABETH LAWRIE, æt. 14, admitted 12th September 1803, affected with almost constant involuntary motions of the left arm, and involuntary contractions of the muscles of the face, and other symptoms similar to the last. Belly regular, heat of skin natural, pulse 75. Has been labouring under this complaint for two weeks. It was preceded by headach and spontaneous vomiting. Has used some remedies, with the nature of which she is unacquainted.

Sept. 13. Habt. q. p. Bol. e Sub-Mur. Hydr. cum Jalap. et vespere, ni solvatur alvus, Enema domesticum.

— 14. Several copious, feculent, but fetid stools.

Habt. omn. noct. Pil. Aloet. iij.

— 15. One stool in the course of the evening. Involuntary motions abated.—Repr. Pil. Aloet. vesp. et Sumt. cras mane Infus. Sennæ 3 iij.

— 16. Cathartics continued.

— 17. Walks with increasing firmness and vigour. Irregular motions of left arm continue to some extent. No stool from last cathartic.

Habt. q. p. Haust. ex Oleo Ricini. Repr. Pil. Aloet. et Infus. Sennæ ut antea.

— 18. Contr. Cathart.

— 19. No stool. Involuntary motion of left arm aggravated.

Habt. q. p. Bol. e Sub-Mur. Hydr. cum Jalap.

Intr. Pil. Aloet. & Infus. Sennæ.

— 20. A consistent fetid bilious stool. Rejected the bolus by vomiting.

Habt. Pil. Aloet. xij. Sumt. ij. omni quadrihorio.

Sept.

Sept. 21. No stool. Contr. Pil. ut heri.

— 22. Passage of the belly in the course of yesterday. Motions of the arm more steady. Contr. Pilulæ.

— 24. Belly open. Stools of firm consistence, dark colour, and still fetid. Irregular motion still more relieved.

Contr. Pil. Aloet.

— 26. Habt. vesp. Enema purgans. Cras mane Infus. Sennæ $\frac{3}{4}$ iv. duobus vicibus. Intr. Pil. Aloet.

— 29. Three natural stools. Dismissed cured.

Habt. secum Pulv. Jalap. comp. $\frac{3}{4}$ iv. divid. in dof. xvj.—one every morning.

THOMAS WHITE, æt. 9, admitted 28th December 1803.—Affected in every respect similar to the last patient, except that, during sleep, the involuntary motions continue. Pulse natural. Belly regular. These symptoms have been present eight days. The right side was first attacked, and seems to be more affected than the left.

Dec. 29. Habt. Bol. e Sub-Mur. Hydr. cum Jalap.

— 30. Repr. Bolus.

— 31. Two stools, both scanty, of a pale yellow colour, and somewhat tough consistence. Involuntary motions are less violent, and disappear during sleep. He walks more steadily. Repr. Bolus.

Jan. 1. Repr. Bolus.

— 2. Pil. Aloet ij. omni trihorio.

— 3. Copious feculent discharge, of natural appearance. Eyes more lively, and countenance of more healthy appearance. Involuntary motions nearly gone. Appetite improves. Since yesterday's visit 10 pills taken.

Contr. adhuc Pil. Aloet. usque dum iterum plene dejiciatur alvus.

— 4. Has had a farther copious, and, to appearance, natural alvine discharge. Appetite still mending, and involuntary motions subsiding.—Intr. Pil. Aloet.

— 7. Has continued convalescent. Dismissed cured.

Habt. secum Pil. Aloet. xxiv. one or two every night.

MARGARET JAMESON, æt. 16, admitted May 10th 1804.—Affected similar to the last case, except that, during sleep, the involuntary motions do not continue, although during the night they

are particularly severe, and prevent her enjoying much sleep. Pulse 84. Tongue clean. Appetite impaired. Thirst considerable. Belly bound. Catamenia appeared only once, and in small quantity, more than ten months ago. This affection commenced about the middle of January last; previous to which she had been in good health. The left arm and leg were first attacked, and, about a fortnight ago, changed to the right side. Has used a great variety of remedies, with the nature of which she is ignorant, without relief.

May 11. Motion rather better since admission.

℞ Sub-Mur. Hydr. gr. iij.

Pulv. Jalap. comp. gr. x. M. Ft. Bol. statim sumend.

— 12. Two stools only from cathartic. Thinks herself better.

℞ Submur. Hydr. gr. v.

Pulv. Jalap. gr. xv. M. Ft. Bol. cras primo mane sumend.

— 13. Involuntary motions much diminished. Fæces natural. Medicine operated well.

℞ Cras mane Bol. ut antea præscript.

— 16. Cathartic operated four times. Fæces black and fetid. Convulsive motions very much diminished.

Iterum Repr. cras mane Bol. ut antea.

— 18. Cathartic operated well. Fæces natural. Involuntary motions almost gone. Full diet.

— 20. Involuntary motions entirely gone. Dismissed cured.

MARY MURRAY, æt. 15, admitted 8th June 1804. Affected almost constantly, in a greater or less degree, with irregular and involuntary motions of the head, tongue, lower jaw, both superior extremities, and right inferior (the left not being at all affected), turning them in various directions, and causing any voluntary exertions of these parts to be very unsteadily performed, so that she cannot feed herself. She drags the right foot in walking. These motions entirely cease during sleep. She is also affected with headach, very indistinct articulation, imbecility of the mental functions, and frequent fits of crying without any evident cause. Swelling of the abdomen comes on in the evening, which disappears in the morning. Pulse 80. Tongue clean. Appetite good. Belly very bound. These complaints commenced about three months ago, with pains in her legs and arms, apparently of a rheumatic nature, and which were ascribed to exposure to cold. These were removed by laxatives and external applications; after which these motions gradually supervened, first in the legs, then

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in all the parts at present affected. Previous to this attack she was an healthy girl, and of a lively, active disposition.

June 9. ℞ Sub-Mur. Hydr. gr. v.

Pulv. Jalap. gr. xv. Ft. Bol. primo mane sumend.

From this date to the 21st, the cathartics were continued daily, with the exception of one day. They generally produced two or three stools.

— 11. Three more stools, of natural appearance, yesterday afternoon, from the cathartic. Involuntary motions somewhat better. Countenance more natural.

— 15. Purgative operated three times after the visit. Stools black and fetid.

— 19. Cathartic of this day produced nausea and vomiting. Two stools. Involuntary motions much diminished.

— 21. Five natural stools since yesterday. Does not complain of debility. Countenance more natural. Motions much diminished.

— 29. Since last report, involuntary motions much better. Fæces natural. Omitt. Bolus.

℞ Pulv. Cinchon. Off.

Pulv. Valerian. Sylv. p. æq. Capt. gr. xxx. forma Boli bis indies.

July 1. Involuntary motions rather better. Belly bound.

Capt. cras mane Bolum ex Sub-Mur. Hydr. gr. v.

Pulv. Jalap. gr. xx.

From this date to the 14th, the tonics and cathartics were prescribed daily; during which time the fæces presented a natural appearance. On the 14th, fæces natural. Involuntary motions almost entirely gone. Dismissed cured.

From these cases, the following facts seem to be established:

1st, From the exhibition of even two or three cathartics, the involuntary motions, and other symptoms, were much abated.

2^{dly}, Although the cathartics were continued daily for a considerable length of time, the patient, instead of becoming more debilitated, became stronger, and walked with a firmer pace.

3^{dly}, During the progress of the cure, if at any time the cathartics did not produce an evacuation, the involuntary motions recurred, and all the symptoms were aggravated.

4^{thly}, The fæces, before the exhibition of the cathartics, were small in quantity, required a large dose of the purgative, and in every instance were black and fetid.

And,

And, *lastly*, When the disease was cured, the appearance of the *feces* became natural.

Upon the whole, the connexion of the disease with the state of the intestinal discharge, seems evident; and as, in all the five cases, fetid, dark-coloured evacuations preceded the cure, it would appear that, with them, the cause of the disease was removed. We may therefore, I think, legitimately conclude, that the involuntary motions, debility, and other symptoms, were in these cases produced by local irritation in the bowels, which was afterwards communicated to the whole system through the medium of the nerves.

The disease occurs very rarely indeed, except in children under the age of puberty, and of a delicate constitution. In such habits, irritation may be produced by very slight causes, such as a depraved state of the intestinal secretions, an accumulation of *feces*, worms, teething, &c. From the appearance of the stools, it seems highly probable that the liver was affected; and this idea is rather supported by the effects produced from the remedies exhibited. There was also, probably, an accumulation of *feces*, from the use of food too coarse for their weak digestive organs to assimilate, conjoined with a want of that exercise which is necessary for healthy digestion, as is the case with those children who are kept, at an early period of life, confined to a sedentary occupation, of which we have an instance in Mary Murray, who was a flax-spinner. I have also been informed, that in the Orphan Hospital of Milan, the disease at one time occurred so frequently, as to induce a suspicion that it was contagious, or at least, like epilepsy, imitative; and it proved so obstinate, that it was considered as incurable. The true causes were, probably, improper food and confinement; and the treatment was under the direction of the Cisalpine Exdirector Moscati, who was just at that time actively employed in revolutionizing the medical opinions of his country, and who was one of the first to apply the Brunonian doctrine to practice.* His treatment must have been tonic, and his failure was notorious. The irritation from worms in the intestinal canal may also produce this disease; but, in none of the five cases we have related, did any symptoms occur

* The Italian Physicians are much indebted to the celebrated Dr Moscati, and to Rasori; to the first, for having caused the *Elementa Medicinæ* to be reprinted; and to the second, for his elegant translation of the *Compendium of the New Doctrine of Brown*, to which he has added notes, and a preliminary discourse. *Introduzione alla Storia della Medicina antica e moderna di Rosario Scuderi*, M. 8vo. Napoli, 1796.

occur which could render it probable that they arose from this cause.

Teething is another species of irritation, which was first observed to produce Chorea by Dr Monro. A young lady was affected with Chorea of one side. On examining her mouth, it appeared that she was cutting one of the molares of the same side. Dr Monro directed a crucial incision to be made through the gum, and the disease ceased in a few days. Some months afterwards, she was again seized with Chorea, but the other side was affected; and, on examination, it was again found that she was cutting one of the molares of the affected side. A deep crucial incision again removed the disease.* This observation is confirmed by Dr Gregory. He was called to a boy very ill of Chorea; and on examining his mouth, he found that the second set of teeth was pushing up by the side of the first, which had not fallen out at the usual time. By removing a considerable number of the first set the disease was removed in a very short time, although, formerly, the spasms had been so violent as to throw him down on the street. Next year he had another attack, which was removed by taking out the rest of the first set of teeth. He was again attacked, however, at the age of fifteen; and as no cause of irritation could be discovered in the mouth, he was treated with Extract of Cinchona and Sulphate of Iron, and was cured. Another boy, who was twice attacked with Chorea was cured both times by scarifying his gums. Although Dr Gregory does not attempt to explain why the second set of teeth should thus produce Chorea, while the first produces Epilepsy, he considers the fact as established, and as forming a very valuable addition to the history, pathology, and treatment of the disease. These important facts directly support the opinion which I have advanced, that the symptoms of Chorea depend on local irritation, and not on debility; and that they are to be removed by removing the causes of irritation, by scarifying the gums, by expelling the worms, or by the use of brisk purgatives. This theory and treatment differ, indeed, extremely from those advanced by the authors of the greatest reputation. Sydenham ascribed it to a humour thrown upon the nerves; and his indications of cure were, to diminish it by blood-letting, and the use of purgatives, while, at the same time, he strengthened the nervous system.† But blood-letting was

* Dr Monro senior, Lectures on Anatomy and Surgery.

† Cum adfectus iste ab humore aliquo in nervos irruente, quorum irritatione istiusmodi motus præternaturales producantur pendere mihi videntur. Indicationes curativas primum ad humores illos tam venæsectione quam purgatione minuendos, deinde ad corroborandum genus nervosum omnino dirigendas censebam.—*Schedula Monitoria.*

was found, by Sauvages and Cullen, to be very prejudicial in many cases, and is no longer prescribed; and Dr Gregory thinks it highly probable that the success of Sydenham's treatment was owing entirely to the tonics, and not at all to the purgatives or bleeding. Dr Cullen advances no theory of the disease, but says it often yields readily to tonic remedies, although he confesses that he has seen it continue for many months, in spite of remedies of all kinds. Dr Brown does not mention this disease particularly; but we can be at no loss for his sentiments with regard to it. With his usual dogmatism, he asserts that all spasmodic diseases are diseases of debility, and yield readily to tonics and antispasmodics.* The first part of this assertion is hypothetical, and the second is erroneous. Darwin supposes Chorea to be a disease of association, consisting in decreased associate motions, catenated with voluntary motions. He says that the patient can at any time lie still in bed, which shows that it is not a convulsive motion. But our patient Jameson could not lie still in bed, and yet no one will doubt her being affected with Chorea. The only cause of this disease which he notices, is the itch being too hastily cured; and, to remove it, he prescribes the following means: 'Give the patient the itch again. Calomel a grain every night, or Sublimate a quarter of a grain twice a day for a fortnight. Steel. Bark. Warm Bath. Cold Bath. Opium. Venesection once at the beginning of the disease. Electricity. Perpetual slow and repeated efforts to move each limb in the designed direction, as in the titubatio linguæ above described.'

It is evident that all these systematic writers have considered Chorea as a disease of debility; and the same opinion has been almost universally adopted by practical physicians, who, seeing their patients labouring under evident debility, have ransacked the whole Materia Medica for tonics and antispasmodics. Under this treatment, Chorea has always been considered as very difficult to cure; and, in the generality of cases, if not removed by the change which the system undergoes at the age of puberty, has continued to harass the wretched sufferer ever afterwards. Now, when we compare the frequent failures of the tonic plan of cure with the invariable success of the purgative, we must conclude, in direct opposition to the hypothetical dogma of Brown, that the symptoms of Chorea do not depend primarily on debility, but

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that

* In treating of Trismus, Brown has these words: 'DCXLV. E debilitate esse, fidem faciunt, omne spasmi genus semper in debilitate positum, nulla tetani, qui idem prorsus adfectus est, magnitudine tantum differens, origo alia, denique hujus, pariter, et aliorum omnium spasmodum, curatio stimulatricis felix, infelix antispasmodica.'

that the debility is merely symptomatic of the disease. But, in whatever manner the phenomena of these cases may affect the theory of the disease, they establish, incontrovertibly, a much more important conclusion,—that it yields readily to the repeated and continued use of drastic purgatives.

For this improvement in the practice of Medicine, we are indebted to Dr Hamilton, senior Physician to the Royal Infirmary of Edinburgh.

IV.

Cases in which diseased portions of the Tongue were successfully removed by means of Ligatures. By Andrew Inglis, M. D. Fellow of the Royal College of Surgeons, and one of the Surgeons to the Royal Infirmary of Edinburgh.

DONALD M'KAY, aged 24, was admitted into the Hospital on the 24th of July 1803. There is a tumour of a pretty firm consistence, rough and irregular on the surface, somewhat resembling a mulberry, occupying the upper and left side of the tongue, from the root to within an inch of the extremity. It rises about a quarter of an inch above the surface of the tongue, and is about an inch in breadth. On its lower edge, there is a small ulceration, which only admits the point of a probe, and does not seem to penetrate into its substance. It is attended with considerable pain, increased on pressure. One of the submaxillary glands is enlarged, and his deglutition is also greatly impeded. This affection began nineteen years ago, in the form of a small tumour like a pea, in the middle of the tongue, since which time it has gradually increased to its present size. The pain was not severe until about five months ago, when it became sharp and lancinating, accompanied with frequent and profuse hæmorrhagies from the tongue, of which, however, there has been no return these last two months.

After his admission into the Hospital, the form and size of the tumour gradually increased. The swelling of the submaxillary gland remained stationary, and some inflammation and swelling of the parotid gland were observed; and he complained much of thirst, parchedness, and burning heat in his mouth. It was now determined to remove as much of the tumour as possible, as the only means of giving him any chance of recovery.

On the 27th of August, a crooked needle, threaded with two ligatures,

ligatures, one white and the other red, was passed through the substance of the tongue, from the left edge below the tumour, about half an inch from its anterior extremity, and brought out on the right side of the upper surface of the tongue beyond the tumour. The red ligature was now drawn out of the needle, and a black one put on. The needle, carrying the black and white ligatures, was plunged into the tongue on the right side of the tumour, about two inches farther back, and brought out below the tumour on the left edge; so that the wounds made by the needle were nearly parallel. Having removed the needle from the ligatures, the two ends of the red one were tied, so as to include the anterior part of the tumour; the two ends of the black one were tied as far back as possible; while, on tying the ends of the white ligature, the whole base of the tumour was insulated, and the circulation in it stopped. Immediately after the operation, he got a draught with fifty drops of Tincture of Opium.

Aug. 27. Eight P. M. complains of excruciating pain since the operation. The draught was ordered to be repeated at bedtime.

— 28. Slept none during the night; but feels much easier to-day, as the pain is considerably abated.

— 29. Slept well during the night, and he is now pretty easy; but he complains that he cannot eat on account of his tongue.

— 30. Was very restless during the night, although he took his draught as before, and complains much of pain to-day.

Sept. 1. In consequence of the white ligature becoming loose, on account of the diminution of the tumour, a fresh ligature was to-day carried round its base, by means of an eyed probe. He has since complained of intolerable pain, attended with great salivation. The swelling of the submaxillary gland has of late increased. He was allowed a bottle of porter daily.

— 5. Feels rather easier. Salivation somewhat diminished. The tumour on his tongue seems to begin to slough: for some days past it has been of a whitish colour. Breath fetid. Much thirst.

— 7. Was seized with epistaxis yesterday morning, which again returned last night when he was asleep, and has weakened him considerably; but complains less of pain to-day.

— 13. Has passed a good deal of blood by stool, attended with tenesmus.

Sumat Sub-muriat Hydrarg.

Pulv. Rad. Conv. Jalap. ana gr. iv.

Rept. etiam Haust. Anod. cum Tinct. Opii grt. lxx. hora somni.

— 15. Tongue continues much the same; but as the white

ligature had again become loose, on account of the farther diminution of the tumour, a fresh one was applied round its base.

Sept. 16. Complains much of pain since the last ligature was applied. Belly costive. Capiat Pulv. Conv. Jalap. comp. 3 i.

— 25. Complains much less of pain. The former ligatures having all become loose, a fresh set was this day applied.

Sumat Haust. Anod. cum Tinct. Opii gtt. l. et Capt. Elect.

Castæ cum Senna, pro re nata.

— 26. Complains much of pain in his head and tongue, and also in the submaxillary gland, which is considerably enlarged.

— 30. The tumour begins to have a sloughy appearance.

Utatur Decoct. Astring. comp. pro Gargarism.

Oct. 1. The part of the tumour included within the ligatures, was to day completely separated from the tongue and taken off, and he now feels pretty easy.

— 9. The part of the tongue from which the anterior portion of the tumour had been removed, being now completely cicatrized, it was thought advisable to remove, by the same means, the remaining portion of it, extending to the root of the tongue.

With this view, a needle, threaded with two ligatures, was plunged in below the anterior extremity of the tumour, and carried backwards, so as to be brought out entirely beyond it. On tying the one ligature to the right side, and the other to the left, the remaining part of the tumour was completely insulated. Immediately after the operation, he got a draught with forty drops of Tincture of Opium.

— 22. The ligatures were tightened.

— 26. The tumour is now almost separated, and the ligatures were again tightened.

— 29. The tumour is now completely removed from his tongue; but he still complains of some pain in the side of his mouth.

He remained in the Hospital until the 14th of November, when he was dismissed cured; and he has, since that time, continued perfectly well.

CASE 2.

HANNAH BLAND, aged 10, was admitted into the Hospital on the 24th of June 1804. A tumour of a red colour, and apparently of a spongy texture, on which numerous granulations of a pearl colour can be perceived by means of a magnifying glass, is situated

situated near the point of her tongue, projecting beyond, and affecting both its upper and under surface. It is attended with little pain or inconvenience, and is said to have commenced about three years ago, in the form of some small warts, which, in the course of six months, began to assume the appearance above described, and to extend farther upon the tongue. For some time past it has remained stationary. Her general health is unimpaired; and there does not seem to be any enlargement of the sublingual or maxillary glands.

June 28. She complained of slight pain in the throat and-neck, increased by deglutition.

July 5. A crooked needle, threaded with two ligatures, was passed from below, upwards and backwards, so as to get beyond the diseased portion of the tongue; and, by tying the two ends of the one ligature to the right, and the two ends of the other ligature to the left, the whole diseased portion was included between them, and the circulation in it completely stopped. She complained little of pain from the operation. But immediately after it, she got an Anodyne draught, with fifteen drops of Tincture of Opium, and she was ordered two pounds of beef-tea daily.

— 6. Complains of considerable pain in her tongue, and of a disagreeable taste in her mouth. *Utatur Infus. Rosar. Gallic. pro Gargarism. Rept. Haust. Anod. Aromat. cum Tinct. Opii gtt. xx. vespere; et Sumat cras mane Pulv. Rad. Conv. Jalap. comp. 3 fs.*

— 7. The portion of the tongue included between the ligatures begins to assume a black appearance. *Cont. Med.*

— 8. Pain of tongue and unpleasant taste in her mouth much the same; but a considerable flow of saliva has supervened. Belly rather bound. Pulse 96. Skin hot.

Sumat Pulv. Conv. Jalap. comp. 3 fs.

— 9. The ligatures having become loose from the decrease of the tumour, another pair was applied in the same manner; and she complained much of pain from the operation.

Capiat statim Haust. Anod. ut antea, et Repetatur vespere, si opus sit.

— 11. Complains much of pain and bad taste in her mouth.

Cont. Gargar. Infus. Ros. Gallic. Sumat statim Pulv. Conv. Jalap. comp. 3 ij.

— 13. The portion of the tongue included between the ligatures came away to-day. *Cont. Med.*

After this, the pain soon ceased altogether; and on the 9th of August she was dismissed perfectly cured.

The successful termination of these cases is a proof of the progress which the Art of Surgery is daily making. A very few years ago, these patients would have been abandoned to their fate; and in all probability their existence would have terminated by a lingering and painful disease. The sensibility of the tongue was always considered so great, that surgeons were afraid of the irritation which they believed ligatures would produce; and the vascularity of its texture precluded the possibility of removing any considerable portion of it by the knife. But an accident which fortunately fell under the observation of Mr Home of St George's Hospital, London, having convinced him that the irritability of the tongue was very much overrated, he took the first opportunity which occurred of ascertaining the success or danger which might result from the use of ligatures in attempts to remove a portion of it when diseased. His success was equal to his most sanguine expectations; and he performed a perfect cure in the three first cases with which he met.

The cases above described which fell under my care as one of the surgeons of the Royal Infirmary of this city, form an addition of considerable importance to the observations on the structure of the tongue by Everard Home, Esq. F. R. S., published in the Philosophical Transactions, as they not only confirm all the conclusions contained in that paper, but that of M'Kay proves that, even where the disease has made very considerable progress, we need not despair of effecting a cure. In this instance, nearly the whole upper surface of the tongue, from within a little of the tip to the very root, was removed, the tongue being as it were split horizontally, and the upper half taken away; and even in this man the cure might have been effected in a shorter time, if at the first I had tightened the ligatures with greater confidence; but, owing to the great thickness of the tongue, the firmness of the tumour, and the strong, compact, muscular structure of the tongue included between them, they became repeatedly so loose that they were obliged to be tightened or renewed. This case was attended with another very great difficulty, which was the impossibility of removing all the diseased part by the first operation, on account of the great length which it extended backwards; and even after the removal of the anterior portion rendered it more easy to get at what remained, still the second operation performed on October 9th was attended with very great difficulty. For, after passing the needle beyond the disease, I found it impossible to draw it through, on account of the narrowness of that part of the fauces, as, on every attempt to turn the needle, the point run into the uvula. I was therefore obliged to withdraw it entirely, and to carry through
the

the ligatures by means of a very flexible silver-eyed probe, which I passed through the passage made by the needle. In the first case, the operation was performed before I or any of my medical friends had seen Mr Home's observations; but, in the second, which approached nearer Mr Home's cases, it was performed after I had seen them. In this, the tumour dropped off much sooner, partly owing to its not being so firm, and partly owing to the ligatures being pulled tighter. I should think it however advisable not to draw them very firm at first, but gradually to tighten them, or apply new ones, as the cicatrix forms while the ligatures are extirpating the tumour; by which means, when it drops off, the sore left is rendered extremely small.

V.

Case of a Remarkable Conformation of the Urinary and Genital Organs in a Female Child, with an Engraving. By Mr W. H. Coates, Surgeon to the 5th Dragoon Guards.

THE following case of variety from Nature's accustomed walk, I beg leave to present for insertion in the Edinburgh Medical and Surgical Journal, if it shall be thought worthy of a place. It occurred to me in practice, four years since, and appears so very interesting, that I trust I shall need no apology in communicating it to the medical world; for although it is not a singular case, yet instances of this kind are by no means common, and few have been detailed with sufficient accuracy. It besides adds to the mass of evidence which decides it to be a distinct class of malformation, and may possibly lead ultimately to important conclusions.

Perhaps this case will not elucidate any physiological problem; it however serves to strengthen the fact, that this variety of malformation does not consist of chance cases, but, in its leading features, is subject to some general law: for in this, as in most other instances where Nature steps aside, she does not err merely in one respect, but other parts of the same subject are equally monuments of her whimsicality with those apparently connected with her first object. Several cases of the same kind are on record, but a very small proportion indeed are females, and the description of these is generally defective: in all of them, the external organs of generation differ most essentially from each other, and from the usual natural appearances. That this should be the fact in the males, in whom the passage from the bladder is also the conducting tube for the semen, is not surprising; but

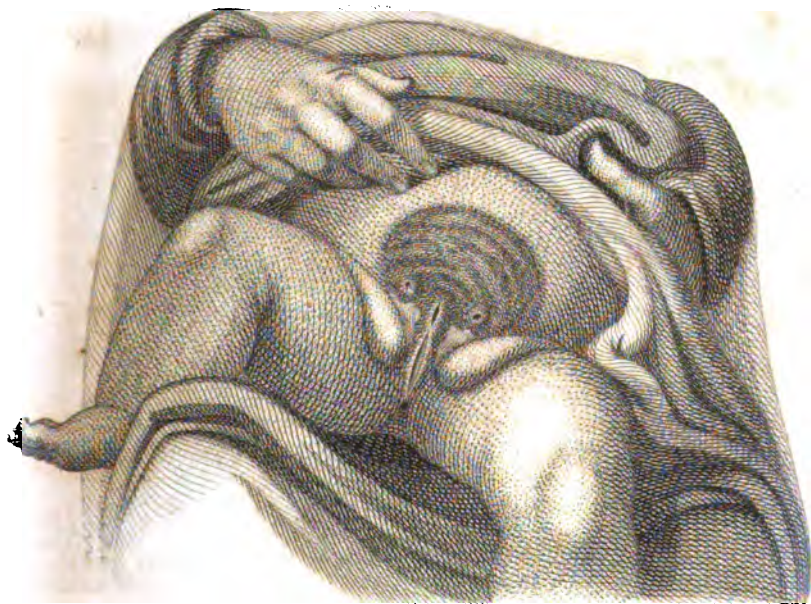
in females, where the generating and urinary organs are distinct, it is most singular.

The case alluded to is that of an infant, one of female twins, belonging to a respectable private soldier of the regiment in which I have the honour to serve. In many respects it is similar to that recorded by Dr Baillie in the Medical and Chirurgical Transactions of 1793, Vol. I., and to that of a young man, (Mathew Ussem), a native of Cologne, also noticed by Dr Baillie, and who, I believe, is still living. Both these cases I have myself frequently seen, and I was occasionally present during the dissection of the former. Probably the case I am about to describe does not differ in the more essential points from the above, except in being of the opposite sex, with the varieties necessarily attendant on the organs of generation, which, as far as external observation can decide, are all involved in this *lusus naturæ*.

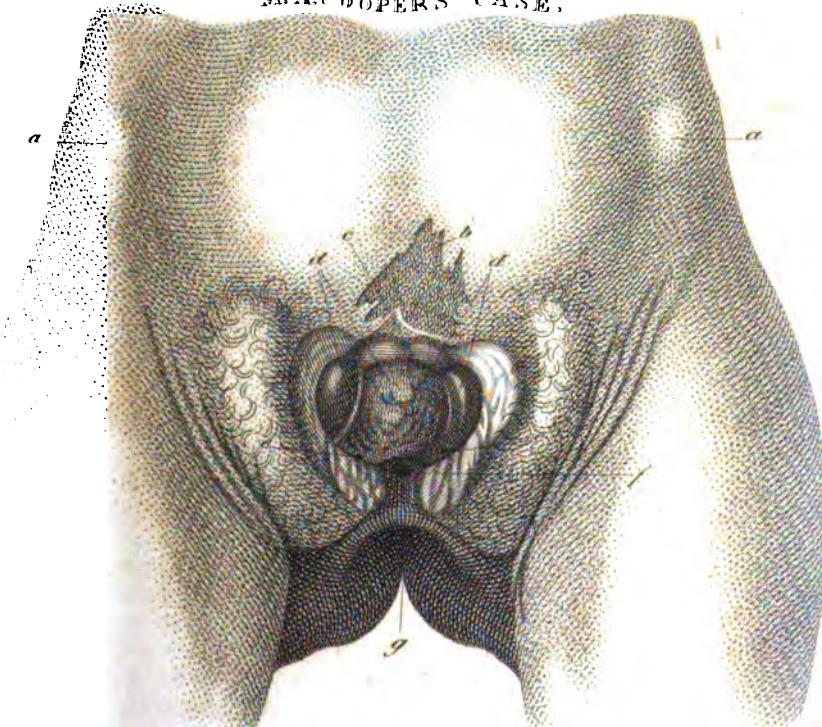
The infant, at the time of taking the drawing and description, was two months old; a strong healthy girl, by much the more robust of the two. In the hypogastric region, and about half an inch above the pubes, there protrudes from the abdomen, through an opening in the linea alba, which forms a strong ligament round it, a spongy substance of extreme vascularity, and of an unequal granulated surface, about the size of half an ordinary nonpareil apple, from the inferior part of which, and equidistant from the edges and from each other, emerge two tubes, evidently the urters, projecting somewhat more than the eighth of an inch, and capable of admitting a large crow quill. From these the urine exudes, *guttatim*; but occasionally it is forced into a continued stream for a few seconds, by the exertions of the child when crying. This circumstance was however more evident when the subject was younger than at present.

The situations of the external parts of generation are as singular as the anatomy of the parts themselves. The labiæ are not commissured, but commence distinct and abruptly, with an apex below, though higher than their natural situation; and, instead of extending to the pubes, they divaricate towards the spines of the ossa ilia, and terminate at about two inches from each other, in broad, prominent, hard, fatty masses, covered with the common integuments. The nymphæ partake much of the nature of the labiæ, not being commissured, and forming small, somewhat triangular irregular bodies (as expressed in the drawing), placed considerably higher than usual, and covered with integuments more delicate than the labiæ, but very far from possessing the usual fine villous covering. Upon separating the nymphæ, a small, irregular prominence is observed immediately under the upper ridge of the pubes, having a faint resemblance to a clitoris; but, on examination, it is found to be the meatus urinarius, pervious for
about

MR COATES'S CASE.



MR COOPER'S CASE.



Engr'd by J. Stewart

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about half an inch, running in a direction over the pubes, and ending in a cul de sac. Of a clitoris, no vestige exists.

The vagina is imperforated, and the anus is much more forward than natural, placed precisely in the usual situation of the vagina. The raphe perinæi, which is rougher and more prominent than ordinary, occupies the whole length from the anus to the symphysis pubis.

The bones of the pubes are united by symphysis, and no deficiency is perceptible. In this particular, the present case differs essentially from most of those on record, where the bones of the pubes were considerably separate, but united by strong ligaments. The sacrum, by external examination, appears to be more elongated than usual, and the os coccygis forms a more considerable curve. To this unusual length of the sacrum and os coccygis may possibly be attributed the very forward situation of the anus and external parts of generation; for, had not the anus been thrown forwards, it must have interfered with the sacrum.

The umbilical cord emerged from the abdomen at least two inches lower than usual, immediately above the protuberance, and through the same opening in the linea alba. Shortly after the ligature separated from the cord, the remains of the umbilical vessels were no longer visible, having retreated behind the tumour into the abdomen.

From the surface of the protuberance, which had much the appearance of glandular structure, was secreted a large quantity of lubricating fluid, serving to defend it from the stimulus of the urine, which, as before stated, was constantly flowing. The tumour itself varied considerably, perhaps to more than half its original size, according to the exertions of the infant, particularly in crying. At the period of the child's leaving me (by the discharge of the father from the regiment), the surface of the protuberance seemed to have decreased, by the encroachment of the cuticle at its upper surface and sides; and I was induced to believe that, with attention and contrivance to prevent the stimulating effects of the urine, a considerable portion might be defended in the same manner. It did not appear to be very sensible, since neither the handling it rather roughly, nor the passing of a probe, of the size of a crow quill, up to the kidney, excited expressions of pain. Having described the case with as much accuracy as in my power, I beg leave to refer to the drawing, which was taken with tolerable correctness, for further explanation.

Although, perhaps, it will be deemed futile to indulge in speculations on Nature's object, in this digression from her accustomed track, yet, from the uniformity of several cases of the same description, and of both sexes, it would appear evident that they are

are not merely the effect of chance, but that her object was determinate. If I may be allowed to hazard conjecture, I could suppose, that at, or soon after conception, the anterior portion of the bladder had been deficient; and that the only plan by which this error could be remedied, and the existence of the child preserved, was the exposure of the ureters, by thrusting them out of the abdomen, and inverting the remaining portion of the bladder. It will probably be considered a stretch of fancy to grant Nature the exercise of reason in her operations; yet many of her exertions imply such a qualification; and although she occasionally errs altogether, yet her failures seem to arise from the deficiency of constitutional energy of her subject, rather than from any mistake, on her part, in the means intended to remedy misfortunes, or to rectify errors.

The explanation I have attempted certainly does not extend to the unnatural appearances of the organs of generation, or impervious urethra, &c. which by some may be considered as connected with the extraordinary protrusion of the bladder. I can however consider those appearances but as accidental and secondary circumstances; and am induced to form this opinion, from the great deviation in these parts in every case described. I am sensible, however, that any attempt to explain the intentions of Nature in these very extraordinary deviations, amounts to mere conjecture; but they afford ample food for the speculating physiologist, and may add, at some future period, important improvements to his science, and possibly even to Surgery. At all events, the numbers of similar cases enable us to consider them as establishing a distinct class of malformation.

Description of the Plate.

The tumour seen in the centre of the hypogastric region, is the interior surface of the posterior portion of the bladder, inverted and protruded through the abdominal muscles and integuments. Behind the centre of the upper edge of this tumour, the umbilical scar is concealed. The chink in the centre of the lower edge is the urethra, impervious. At the sides of this chink are two papillæ, through which the ureters open externally. Below it is the impervious vagina; and, immediately below the vagina, the anus is seen thrown remarkably forwards. The two pyramidal tumours at the sides of the vagina are probably substitutes for the external labia, and the small triangular bodies within them are probably nymphæ.

VI.

An attempt towards a systematic Account of the Appearances connected with that Malconformation of the Urinary Organs, in which the Ureters, instead of terminating in a perfect Bladder, open externally on the Surface of the Abdomen. By Andrew Duncan jun. M. D. Fellow of the Royal College of Physicians, and Royal Society of Edinburgh.

THE study of the various deviations from the structure of the organs of the body, is not only highly interesting, on account of the curious observations connected with it, but often leads to conclusions of real practical utility. They may in fact be considered as natural pathological experiments, which enjoy at least this advantage over those performed by art, that, in addition to all the information which may be derived from the latter, they also shew the manner in which the deviation affects the structure of the neighbouring parts. Their value becomes still greater, if they cannot be artificially performed. Thus, although it might be plausibly conjectured that the urinary bladder is not essential to the life of those animals in which it naturally exists, but that it is an organ of mere convenience or comfort, still, however ingeniously the opinion might be supported, it would only amount to a plausible conjecture. To demonstrate its truth, we must have recourse to facts; and, if we were to attempt to obtain these artificially, by destroying or extirpating the bladder, we should certainly fail in the object of our experiments, and be unable to deduce any satisfactory conclusion. But the cases which are on record, in which both men and other animals have reached old age,^a and even procreated their species,^b although the bladder was wanting, or at least incapable of performing its function, not only demonstrate that it is merely an organ of convenience, but also shew that its deficiency is so frequently connected with certain other deviations from the natural structure, as to render it highly probable that they are causes of each other, or at least that they depend on some common cause.

The very curious case described by Mr Coates, first led me to attend to those morbid alterations of the structure of the bladder, which render it incapable of performing its function. The similar case so fully described in a male by Dr Baillie, and that of the German traveller Mathew Usser, were both well known in this country; but still the peculiar conformation was generally
believed

^a Flajani, 67 years.

^b Huxham, Oliver, Bonnet,

believed to be very uncommon.^c On investigating the subject, however, I find that the malconformation is far from being very rare, especially in the male sex;^d and it now occurred to me, that it might be worth while to attempt to draw up a systematic account of its varieties. In this task my labour was much abridged, by a Gottingen inaugural dissertation '*De vesica urinaria prolapsu nativo*,' by Dr Roose, late professor in Brunswick; and I was still farther encouraged to proceed, by the very handsome and liberal manner in which Mr Astley Cooper communicated to me his accurate and splendid drawings of a case which occurred to him.

To render this account as complete as possible, in addition to the female case already described, I shall give,

- 1st, The history of a peculiar instance in the male.
- 2^{dly}, A description of the urinary organs.
- 3^{dly}, Other deviations from the natural structure common to both sexes.
- 4^{thly}, A description of the genital organs in the male.
- 5^{thly}, A description of the genital organs in the female.
- 6^{thly}, General observations.

Case of Mathew Usselm.

I. As an example of the appearances in the male, I have selected this case, because it has not yet been described in any English publication likely to preserve it; and because, in consequence of having an excellent cast before me, taken under the direction of Dr Monro, and the information I have received from several anatomists of this place, by whom he was accurately examined, I am enabled to mention particulars not contained in the description drawn up by professor Bonn of Amsterdam, and to correct the erroneous account published in the *Journal de Medicine* by Desgranges.

He was a native of Cologne, a strong healthy man, of small stature, with his thighs much bent outwards, little beard, and an ordinary

^c Desgranges, in 1788, describing the appearances in Mathew Usselm, calls him an example '*peut-être unique de premiere conformation interessante pour les parties genitales, qui pour sa singularité merite de fixer l'attention des sçavans.*' Many of the other cases are mentioned nearly in the same terms, as if there were no similar cases on record.

^d When Mathew Usselm was in Edinburgh, a male child was born in the suburbs having the same malconformation; and Dr James Hamilton junior, Professor of Midwifery, informs me that he has since met with several other examples in his practice.

ordinary tone of voice; and when he presented himself for the inspection of the curious in Edinburgh in 1791, he was about twenty years of age.

In the region of the pubes, in a considerable depression, situated between the penis below, two oblique protuberances at the sides, and the projecting abdomen above, there is a circumscribed tumour, nearly hemispherical, about two inches in diameter, and of a lively red colour. Its surface is granulated, and always moistened or covered with a white mucus. At the inferior edge on each side there is a papilla with a small aperture, from which a transparent fluid continually flows, either in drops or in small jets. Through these apertures he can introduce a bent blunt probe about four inches upon the left side, and almost five on the right. Above these papillæ the tumour is more prominent, especially on the left side, and smoother than on the rest of its surface. It appears spongy, but has a considerable degree of firmness; and it is said to have gradually increased in size, firmness, and wrinkling. From not being covered with the common integuments, it is considerably sensible, but not remarkably so, unless when rudely touched. In the morning, on getting out of bed, the tumour is less, and gradually increases in the course of the day, especially after fatigue. It cannot be reduced, nor is its size diminished by pressure; except that the knobs above the ureters yield a little; but they soon recover their former prominence.

Immediately under this tumour the penis is situated. They are separated by a transverse cleft, which is acutely sensible, and apparently deep, but on examination it proves shallow. The penis itself is short, being scarcely two inches long, or at most three, when in a kind of semi-erection—all that it ever attains. Its thickness and colour are natural; but the glans, which always remains uncovered, is as if cleft nearly half its depth from above, downwards, and laid open; so that its upper surface is flat, and of a lively red, being covered only with a smooth thin membrane. Between the lobes thus formed, there is a groove resembling an urethra laid open. At the end of the urethra, next the body, ~~part of the caput gallinaginis~~ was seen some years ago; at present it is covered with the tumour, and there is the appearance of a canal continued inwards. On the upper part of the penis the prepuce is entirely wanting; below there is a small fold of the skin resembling a portion of prepuce connected with the glans by a frænum.

The scrotum is large and natural in its appearance, and contains the testicles, of which the left descends a little lower than the right; and the spermatic cords may be felt descending more obliquely

on each side, at a greater or smaller distance from each other; but Ten Rhyne represents them in the same perpendicular line over each other. As, however, he never published the promised detail of his case, it is extremely probable that the lower aperture, although called an ureter in the explanation of his plate, was in reality the orifice of the vasa deferentia and prostate gland, as it was placed, not in the spongy surface of the bladder, but between it and the penis, which is the situation in which that orifice is commonly found in these cases. In Penchienati's case, also, they were not placed in a horizontal line, but the one in the centre of the upper edge, which he supposes to be the urachus still pervious, and the other on one side of the transverse diameter. His opinion acquires some probability, both from the situation and the closing of the upper hole some time after the child was born, which could not have happened if it had been the orifice of an ureter, although Mowat also says that one of the ureters in his case closed up. In the case described by Blasius, there was but one external aperture, as the ureters united before they penetrated the bladder. Through these apertures some of the people themselves were in the habit of introducing bent probes or bougies, to the height of several inches;^g and when the passage of the fluid through them was obstructed, either accidentally,^h or by design,ⁱ the uneasiness was very great until the obstruction was removed, when the urine would spout forth with considerable force. The man whose case is described by Innes, used to be at no loss to clear the passage with a bent probe. The flow of fluid through these apertures was increased by diuretic fluids,^k and in some cases by crying,^l exercise, pressure,^m and by voluntary efforts.

From the mere external appearance it might have been inferred, that the apertures were the mouths of the ureters, and that the spongy mass was a portion of the bladder; but, from the internal examination of some cases of this malconformation, the truth of these conclusions has been demonstrated. When viewed on the inside, Dr Baillie describes the spongy mass as a sort of projection, not unlike the posterior view of the urinary bladder, but somewhat stronger, and having the two ureters opening through it. Others directly say, that it was the posterior portion of the bladder.ⁿ Besides the ureters have always been traced into it from the kidneys; and Flajani especially remarks, that they did

not

^g Baillie, Innes. ^h Mowat. ⁱ Innes. ^k Devilleneuve.

^l Mowat, Penchienati.

^m Highmore, Huxham, Oliver, Bonnet, Penchienati, Bartholinus.

ⁿ Palletta, Bonni.

not pass through it directly, but obliquely, as in the natural bladder; and lastly, no other vestige of an urinary bladder has ever been found.^o

The appearance of the kidneys was in general natural. In Littre's case, they were perfectly round and granulated like a mulberry, and in Mr Astley Cooper's, they were lobulated. In some cases their size was greatly increased from accidental causes, such as collections of pus.^p In others,^q however, they were much enlarged, although no such cause was observed as in Flajani's case, who compares the beginnings of the ureters to small bladders. The ureters themselves seem always to have been more or less enlarged. In Mr Astley Cooper's case, they were larger than the rectum. In some instances,^r this may have been partly occasioned, as Dr Baillie suspects, by the frequent introduction of probes and bougies; but it is also observed in infants or foetuses,^s on whom no such cause could operate, and is often much greater than could be occasioned by it. But besides the general enlargement of the ureters, and of the pelvis of the kidneys, Nature seems to have sometimes made other attempts to supply the want of a bladder, either by lengthening the ureters,^t or by enlarging them so much in particular parts, as to resemble small bladders.^u Some conformation of this kind must have occasioned the jet of urine which was observed on reducing the prolapsed uterus, in the case described by Huxham, Oliver and Bonnet, and which alone prevented the former from discovering the true nature of the lusus; and something similar must have existed in Highmore's boy,^x and in all those cases in which the flow of urine could be increased by pressure or voluntary efforts. The descriptions of Le Sage^y and Littre^z do not appear to me to

NO. I.

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warrant

^o Blasius, Ten Rhyne, Gockel, Muralt, Tenon, Cattier, Littre, Nebel, Le Sage, Castara, Buxtorf, Flajani, Baillie, Cooper.

^p Le Sage, right side. ^q Le Sage, left side. Littre, Cooper, Muralt, Blasius, Stalpartius, Nebel, Flajani, Baillie.

^r Baillie, Innes. ^s Stalpartius 2. Littre.

^t Palletta, Castara, Cooper, Flajani.

^u Littre, Default, Blasius.

^x Inferior pars abdominis, ad regionem scilicet vesicæ, tumebat et sæpius super saxa eminentia et cellulas procumbere ad ventrem comprimentum, ut inde vesica exinaniretur coactus fuit.

^y ^z L'uretre descendoit obliquement à gauche, s'entre-croissoit avec les vaisseaux spermatiques; delà il passoit derrière le méocolon droit, traversoit

warrant Professor Roofs's assertion, that in these cases the ureters crossed each other; and sensation is much too uncertain an indication of the real seat of the pain, to allow any certain conclusion in support of it to be drawn from Innes's observation.

III. *Other Deviations from the Natural Structure common to both Sexes.*

Although there is apparently no reason why the malconformation of the urinary organs just described might not exist in a body otherwise perfectly organized, I do not know that any case has been met with in which it was not accompanied by other very remarkable deviations from the natural structure. In the present Section, I propose to enumerate such of these as are common to both sexes.

Of these, the most remarkable, the most constant, and that of which many of the others are merely effects, is, that the bones of the pubes, instead of being closely and firmly united at the symphysis, are separated to a considerable distance from each other. ^a Although this aberration from the natural structure is not mentioned in some of the cases which seem to have been carefully examined, ^b I am inclined to think it actually existed, because, in some of those cases in which it is not pointed out in the description, its effects on the general form are apparent in the engraving, ^c and because, in those instances which have fallen under the inspection of the most celebrated anatomists, and which have been most minutely examined after death, it is always particularly noticed. ^d The tumour of the bladder is indeed often described as being above the pubes; ^e but as, in some of these, the bones of the pubes were, on dissection, actually found separated, ^f it would appear that the expression was merely intended to convey an

traversoit les circonvolutions des intestines grêles, et alloit se terminer dans le centre et à la partie inférieure du fongus, vis-à-vis l'épine antérieure et supérieure de l'os des îles.' L'uretère du côté gauche 'suivoit dans sa marche la même direction, et les mêmes rapports avec ses parties voisines que celui du côté droit, à deux pouces duquel il se terminoit dans le fongus.'

² Littre expressly says, that the apertures of each ureter was somewhat above the place where the os pubis of the same side ought to have been.

^a Baillie, Palletta, Bonn, Roofs, Default, Le Sage, Anonymous, Warwick, Veltkamp, Bonnet, Littre, Huxham, Castara, Flajani, Cooper.

^b Penchienati, Flajani.

^c Teston, Ten Rhyme.

^d Littre.

^e Anonymous.

^f Anonymous.

an idea of the situation of the tumour, and not to assert that the structure of the pubes was natural. Nor are we to suppose that it is so, when, after describing the malconformation of the genital and urinary organs, it is said, in general, that in other respects the structure was natural; for the pubes may not have been examined; and in a case like the present, where the perfect structure is uncommon, it is absolutely necessary that it should be expressly mentioned as being the case. This is only done by M. Desgranges and Mr Coates. The case described by the former is that of Mathew Ussem; but every one, I apprehend, who compares his account with that of Professor Bonn, will be satisfied that he is mistaken. The Amsterdam Professor's description was completely verified by the examination of the anatomists in this place. In this particular, therefore, Mr Coates's case appears singular; but as the separation may exist in various degrees, and the examination here was only external, even this cannot be confidently stated as an exception.

The effects of this separation of the bones of the pubes, are, to render the pelvis larger ^a and flatter; ^b to separate the acetabula and thighs farther from each other, ^c rendering the gait of the person less firm, ^d the lateral motion greater, and the progress slower; ^e to stretch the scrotum transversely, and to shorten it; ^f to cause the spermatic vessels to descend more obliquely; to throw the spine of the pubes forwards, so as to form projections at the sides of the protruded bladder; ^g to separate the anterior spines of the ilia, ^h and to render them more protuberant; ⁱ to separate the recti-muscles from each other, so that there is an intervening space filled only with tendon and peritonæum; ^k to cause the corpora cavernosa penis to rise at a greater distance from each other, and therefore to proceed transversely ^l and to a greater distance before they unite, so that the penis is much shortened; ^m and lastly, probably to enlarge and weaken the abdominal ring, giving rise to frequent hernia. ⁿ The space intervening between the bones of the pubes is not filled up by cartilage, ^o but by a broad ligamentous membrane, which serves as a support to the viscera of the abdomen, ^p and which, in some cases, was so very strong, and had the skin so firmly attached to it, that the gait was almost natural. ^q Besides the separation of the bones of the pubes in

D 2

Littre's

^a Palletta.	^b Mowat.	ⁱ Littre.
^k Palletta.	^c Baillie.	^m Baillie, Palletta.
ⁿ Palletta.	^d Default.	^p Palletta.
^q Penchienati, Baillie.	^e Palletta.	^o Baillie.
^l Palletta, Baillie, Tenon, Devilleneuve, Le Sage, Anonymous, Warwick, Dana.	^f Palletta.	^h Baillie.
	^g Default.	

Littre's case, the whole bones of the pelvis were convex inwardly, and concave externally.

In the region of the pubes, there seems to have been a considerable tendency to the accumulation of fat, particularly in the direction of the spermatic vessels, giving the appearance of herniæ,^a or forming oblong swellings^b or tumours.^c In many instances, these lateral prominences were principally owing to the projection of the spines of the pubes.^d The pubes, in some instances, was thinly,^e in others plentifully,^f adorned with hair. The same difference took place with regard to the beard of the males, whose voice was also, in general, strong and masculine.^g

The anus and rectum were sometimes natural;^h but most commonly the anus was thrown remarkably forwards;ⁱ so that the perinæum was very much diminished in breadth, or was even altogether wanting.^k On the contrary, but only in a solitary example,^l the distance between the anus and scrotum has been observed to be unusually great. In the boy whom Goupil examined, the anus was so narrow, that he could not go to stool without very great pain, and could not pass any thing in a sitting position, but was obliged to stand or lye. Between his bladder and penis there was also a transverse aperture, through which he passed fetid air, but never any fæces. But of all the cases which have occurred, that of Bartholinus^m is certainly the most extraordinary; and indeed it appears almost incredible, that a man should live forty years with an imperforated anus, subjected to the misery of evacuating his fæces, in a state of the highest fœtor, from time to time, by vomiting. The rectum was sometimes natural,ⁿ sometimes much smaller than usual, even not larger than the small intestines,^o and sometimes it was much enlarged.^p In Default's case, it resembled a natural urinary bladder in a state of distension; and in that dissected by Littre, there was no colon, cœcum

or

^a Devilleneuve.

^b Baillie, Tenon 1. Gockel, Roese.

^c Nebel, Coates, Mowat.

^d Palletta, Bonn, Anonymous.

^e Innes, Huxham.

^f Palletta, Tenon 3.

^g Desgranges, Le Sage, Devilleneuve.

^h Baillie.

ⁱ Palletta, Huxham, Bonnet, Warwick, Littre, Tenon, Roese, Goupil, Coates.

^k Buxtorf, Burns.

^l Mowat.

^m Notanda in hoc prudentis Naturæ providentia, quæ certis quaquam obstaculis impedita et anum pervium negaverat et ductum urinarium, alio tamen medio viri necessitatibus consuluit. Nempe duriores alvi fæces certis periodis finitæque ventriculi concoctione, per cornu ori imposito evomuit, quarum fœditatem saporisque molestiam grato potu, aquæ diluit, quam in hunc usum perpetuo secum circumferebat.

ⁿ Baillie.

^o Le Sage, Cooper.

^p Ten Rhyne.

or rectum, but the ilium terminated in a fleshy pouch, from which a very narrow tube passed to the anus. Where the anus is thrown forwards, the rectum forms a large curve in the pelvis, so that the bladder does not lye upon it, but forms a right angle with it.⁴

Another remarkable and common occurrence in these cases, was the unusually low position of the umbilicus; for in very few instances⁵ only did it occupy its natural situation. Most commonly⁶ it was placed in the hypogastric region, in the upper edge of the protruded bladder, with which in some instances it was so blended, that scarcely any vestiges of it could be discovered after it had cicatrized; and as the birth of some of these cases did not fall under the inspection of professional men,⁷ or the connexion with the placenta had been destroyed during delivery, or previous to it,⁸ they have been adduced as proofs that the fœtus may live and be well nourished in the uterus, although not connected with it by a vascular cord.⁹ But the facts are so contrary to experience and observation, that they can scarcely be supposed to be correct, and would require stronger evidence to substantiate them than the report of an ignorant midwife, or vulgar credulity, supported by the absence of the umbilical scar from its usual place. On the contrary, in every instance which fell under the observation of intelligent professional men at the time of delivery, the umbilical cord connected the child with the mother as usual; and, whenever they have been examined after death, the remains of the umbilical cord have been found, and generally traced to the upper edge of the back part of the bladder, where they were lost behind a plait or caruncle which was observed at the external surface of the skin at that place;¹⁰ and in the other instances, a similar fold, plait or caruncle of puckered skin was formed, leaving no doubt of its being the umbilical scar.¹¹ On the contrary, had Littre's boy survived its birth, there would have been two umbilical scars as the vessels passed out of the abdomen separately.

D 3

In

⁴ Palletta, Le Sage.⁵ Warwick, Nebel, Ten Rhyne.⁶ Gockel, Cattier, Stalpartius 2. & 3. Castara, Saviard, Veltkamp, Bonnet, Tenon 1. Mowat, Dana, Baillie, Roose.⁷ Desgranges, Huxham, Devilleneuve.⁸ Stalpartius, Dana.⁹ Stalpartius, Desgranges. The testimony of the former is the most positive on this subject. He says, 'Hic uterinis carceribus solutus in lucem sine ullo, ne minimo quidem funiculi umbilicalis indicio prodibat, quem idcirco obstetrix in partu a ventre separare necesse non habuit. Deerat etiam umbilicus.'¹⁰ Stalpartius, Default,¹¹ Devilleneuve, Anonymous.

In consequence of the unnaturally low situation of the umbilicus, the umbilical arteries and urachus are rendered proportionally shorter, and the veins longer, than in the natural structure.^b In the case examined by Littre, the course of the umbilical vessels was so curious in general, that although not strictly connected with the subject of the present paper, it deserves perhaps to be noticed. The umbilical cord was two thirds shorter than usual. There was only one artery, which arose from the right iliac, and passed out of the abdomen in the middle of the hypogastric instead of the umbilical region. Nor did the vein accompany it as usual, but separated from it about two inches before it reached the abdomen, which it entered at the top of the left groin; so that if the infant had lived it would have had two umbilical scars. After entering the abdomen, the umbilical vein run up along the left side, resting on the psoas muscle; it then crossed the diaphragm at the side of the last dorsal vertebra; and after having made several turns in the inferior part of the thorax, it terminated in the middle of the cava superior, having received in its progress the two iliacs, the lumbrics, the two emulgents, the vein of the left renal capsule, and the left diaphragmatic. The inferior cava was much smaller than ordinary, as it was only composed of the branches arising from the left renal gland, the liver, gall bladder, and the right part of the diaphragm. The trunk of the superior cava was about one half larger than usual, as it received the umbilical vein, which, in this instance, performed the function of the inferior cava. As the fœtus was well grown, and reached its full time, the distribution of the vessels is an additional proof that it is not necessary that the umbilical vein should terminate in the vena portæ, or that its blood should circulate through the liver before it reaches the heart.

Sexual Organs of the Male.

Upon the most superficial external examination, the aberration from the natural structure of the penis is abundantly evident. In a great majority of cases, its shortness, its bifid appearance, its breadth at the root, its being impervious, and the deficiency or total absence of prepuce, are all remarkable.

These deviations presented considerable varieties, although generally they were of the same kind. In one circumstance they all necessarily agreed, viz. the imperforation of the penis, as there was no cavity in the bladder to which the canal of the urethra could lead. Except in the circumstances of being imperforated, and the absence of a prepuce, the penis in Littre's case seems to have

^b Default, Gockel, Littre.

have been perfect.^d The extreme shortness of the penis was also very generally remarked. Even in the adult it seldom exceeded two inches in length. This was not so much owing to actual shortness of the corpora cavernosa, as to a larger proportion of their length being concealed within the body, in consequence of the increased distance of the tuberosities of the ossa ischii to which they are attached. For the same reason they ascended a considerable way before they united;^e or, proceeding in a transverse direction,^f or directly toward the fungus,^g they terminated as soon as they united. The urethra seemed as if it had been slit open, thus forming a band or groove instead of a perfect canal, and rendering the glans penis bifid.^h That this band was really an imperfect urethra was evident from its general appearance, from its vascular lining with lacunæ opening into it, and indisputably by the presence of the fossa navicularis and caput gallinaginis, with the openings of the vesiculæ seminales.ⁱ Besides, by bringing the lobes of the glans together, it was possible, as in Mathew Usselm's case, to give it the form of a perfect glans, with the urethra opening through its point as usual. The situation of the urethra was also very remarkable; for in very few instances only^k does it seem to have run, as it naturally does, in the lower angle formed by the junction of the corpora cavernosa, but commonly in the upper^l angle, giving the penis and the glans^m the appearance of being inverted. In the texture of the glans nothing remarkable seems to have been observed except the thickness of its cuticle, and this was probably owing to its never being covered by a prepuce, which was either entirely wanting,ⁿ or very deficient, and when large enough, it was often unnaturally thickened, and never covered the glans, but was attached only to the lower half of it, from which it hung down in the form of a crescent. The prepuce was always connected to the glans by a frænum, which sometimes was prolonged, bisected the glans, and connected it with the fungus^o; or, taking an opposite direction,

D 4

bound

^d Elle étoit dure, droite, et telle qu'elle est dans le tems de l'érection et composée du gland, de deux corps caverneux, et de l'uretère. Le gland n'avoit ni prepuce ni trou. Il étoit solide de même que le reste de la verge.

^e Baillie.

^f Palletta.

^g Default.

^h Stalpartius, Mowat, Devilleneuve, Roose, Tenon, Bonn.

ⁱ Default, Bonn, Palletta, Stalpartius, Cattier, Flajani, Michaelis, Sommerring.

^k Stalpartius 3. Innes.

^l Usselm, Baillie, Tenon.

^m Stalpartius 1. & 2. Devilleneuve.

ⁿ Stalpartius 1.

^o Warwick, Stalpartius 1.

bound the prepuce back on the scrotum ^p. In a few cases, the deviation from the natural structure was much greater. In Ten Rhyne's plate, what he describes as a dactyliform imperforated protuberance appears to have been the penis probably bifid with a thickened prepuce. In Tenon's first case, the penis was imperforated and divided at its extremity as if into two heads, the one formed by the corpora cavernosa and the other by the glans. In Le Sage's case it was also extremely unnatural. It was not more than an inch and a half in length, and consisted of two convoluted folds, one above the other, flattened horizontally, and covered with warty excrescences. Where they were in contact with each other, they formed a chink like the os tincæ, and, on separating its lips, a frænum was observed connecting them. This penis had only one corpus cavernosum, no urethra, no appearance of a glans, and was imperforated. Sometimes there was no appearance whatever of a penis. Thus, in Highmore's boy, ^q all was entire and smooth, from the fungus to the anus; and, in Tenon's second case, although the testicles were contained in cuticular folds, resembling the external labia of a female, the penis was entirely wanting, and there was no aperture between the bladder and the anus.

Dr Baillie found the ischio-cavernosi and bulbo-cavernosi nearly natural in their appearance; but the transverse perinæi were seven or eight times larger than usual. In Default's case, the ischio-cavernosi had their common direction; but the bulbo-cavernosi were exactly transverse. In Flajani's case, both the ischio and bulbo-cavernosi were wanting.

The testicles seem always to have been natural, except that in a few cases they were rather small. ^r In some instances they were contained in the scrotum, ^s in others they had not descended, although there was a scrotum, ^t and, again, in some there seemed to be no scrotum. ^u In Default's case they were contained in two folds of the skin near the pubes, resembling, in their figure and situation, the external labia of a female; and, in Tenon's

^p Stalpartius 3.

^q ' In quo a partu nullæ unquam apparuerunt partes quibus sexus distingui potuit, sed omnia glabra et nitida usque ad anum apparuerunt.'

^r Default, Innes.

^s Gockel, Stalpartius 2. Dana, Le Sage, Anonymous, Stalpartius 1. & 2. Cattier, Cneulinus, Veltkamp.

^t Mowat, Devilleneuve, Default, Warwick, Ten Rhyne, Tenon 3.

^u Ten Rhyne, Littre, Tenon 2.

non's second case, from the absence of penis and scrotum, the similarity was still more striking. Devilleneuve thought that, in his case, the descent of the testicles was prevented by the constriction of a portion of skin upon the os pubis as if by a band. In Palletta's case, on the right side, the aperture in the peritonæum, through which the testicle descends in the foetus, was still open, and there was a free passage of considerable size between the scrotal and abdominal cavities, through which a portion of the omentum passed and adhered to the testicle, forming a congenital hernia. For from the natural appearance and undisturbed situation of the stomach and intestines, Palletta concluded that the adhesion had been formed when the testicle was still in the abdomen, and that the omentum had been drawn down along with it. In Dr Baillie's case, there was also an omental hernia of the right side, and the tunica vaginalis on both sides was almost obliterated. * The cremaster muscles were also remarkably strong.

The scrotum itself, from the separation of the bones of the pubes, was so much distended in breadth as to be rarely pendulous, but rather to form a crescent-shaped appendage to the perinæum. † It was often very much wrinkled, ‡ or even corrugated, § without much appearance of raphe. Dr Baillie observed that the cellular membrane was not spongy as usual, but of a very firm compact texture; and that the septum dividing it into lateral cavities was remarkably strong.

The prostate gland was either natural, or indurated, ^b or small, ^c or wanting. ^d The vesiculæ seminales also were either natural, ^e or small, ^f or wanting. ^g They were either attached to the bottom of the back part of the bladder, ^h and occupied their usual situation between the bladder and rectum, ⁱ or they were placed immediately below the kidneys, and adhered to their infundibula. ^k The epididymis seems always to have been natural, and to have terminated in the vasa deferentia. The termination of these, however, was exceedingly various. In some cases

* The tunica vaginalis in Flajani's case was also wanting.

† Default, Innes, Stalpartius 1. Dana.

‡ Devilleneuve, Warwick.

^a Tenon 3. Ten Rhyne, Mowat.

^b Flajani.

^c Baillie.

^d Default, Littre, Tenon 2,

^e Default, turgid with semen. Ten Rhyne.

^f Default, Baillie.

^g Littre, Tenon 2. Flajani, Stalpartius 3.

^h Palletta.

ⁱ Baillie.

^k Le Sage.

cases their extremities were enlarged as usual, or even so much so as to resemble vesiculæ seminales, and, joining with the ducts of the vesiculæ seminales, they opened externally either in the usual place in the urethra,¹ or in a small tubercle forming the root of the penis,^m or in the lower edge of the bladder itself,^p as in Dr Baillie's case, in which their orifices were placed on each side of a considerable opening leading to the prostate gland. In some cases, where there were no vesiculæ seminales, they also opened externally in a caruncle between the penis and bladder.^o In that described by Littre, they terminated in the ureters, near their external apertures. They were, in other cases, impervious. In Tenon's first case, he traced them into some membranes in the bottom of the pelvis, which seemed to have no connexion with the external parts; and, in his second case, they terminated upon the external iliac in a hard white tubercle, in which he could discover no cavity.

The sexual appetite in some of the adults was strong,^p in others weak,^q and in others altogether wanting.^r From the malconformation of the penis it is evident that none of them were capable of procreating the species.

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6. Ten Rhyn Wilh. *Meditationes in magni Hippoc. textum xxiv. De Veteri Medicina, Art. IX. § 92.* 12mo. Lugd. Bat. 1672.

7.

¹ Default.

^m Cattier, Stalpartius 2. Veltkamp, Cattier.

^p Le Sage.

^o Stalpartius 2.

^p Baillie, Bartholinus, Veltkamp, with emission of semen from a hole placed between the penis and bladder. Mr Thompson, Professor of Surgery in Edinburgh, also saw a man from the Isle of Mull who had erections attended with excruciating pains, which were only relieved by nocturnal emissions.

^q Jones, Michaelis.

^r Roose, Devilleneuve.

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28. Castara, *Histoire de la Société Royale de Medecine, ann. 1780 et 1781, p. 323.* Paris.

29. Desgranges, *Journal de Medecine*, &c. Mars 1788.

There is an Appendix by the editor, to this case, in which two others are quoted from an unpublished manuscript on the diseases of the urinary organs, one of which was accurately dissected by Default, and the other is quoted, in the present essay, under the title of Anonymous.

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- *35. Stolte, *Beschryving der wanschapenene teeldeelen*, &c. Zuolle 1770.—*Quotes* Camper.

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40. Roose, T. G. A. *De Nativo Vesicæ Urinariz inversæ prolapsu.* 4to. Gottingæ, 1793.—*Quotes* also an unpublished case of Michaelis.

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Engravings.

Ten Rhyne, Gockel, Stalpartius, Vander Wiel, Mowat, Berger, Warwick, Tenon, Buxtorf, * Veltkamp, Castara, * Flajani, Dana, * Bonn, Roose, Baillie.

Those marked * I have not seen. They were quoted on the authority of Professor Roose, or of the Leipzig Commentaries.

[N. B. To be continued in the next Number.]

VII.

A Case of Catalepsy, with some Remarks on that Disease.

By Richard Lubbock, M. D. of Norwich.

ABOUT twenty months ago, Mr W—— of M——, the apothecary who attended X. Y., a lady who is the subject of this detail, wrote to me, and gave me the particulars of a complaint, appearing to him singular and anomalous, which has more or less continued to trouble her at intervals since that time. His account was, that X. Y., without any previous indisposition, was suddenly attacked, while at work or reading, with an appearance of insensibility, and loss of motion of the purely voluntary muscles for several minutes, although at the same time she remained perfectly conscious of every thing passing around her; without any feeling of sickness or faintness, the colour of the countenance being unchanged, and in no degree different from what it was in the most perfect health. At that time there was no irregular or convulsive motion in any part of the body; and after remaining a short time motionless, and to appearance insensible, and at times without the power of speech, or of expressing her wants or wishes by any kind of sign, she would in an instant resume her activity, without any feeling of bodily or mental inconvenience from what had just taken place.

During these attacks, the limbs were for the most part flexible; but now and then some degree of rigidity took place. At first, the attacks recurred but seldom, about once in a week; but afterwards they happened more frequently, and would equally take place whether the lady was walking or sitting. When the attack took place in the act of walking, she never injured herself by the fall, but, to use her own expression, she seemed to make a ridiculous display of ease and grace in falling. From the foregoing detail, I had but little hesitation in saying, that these attacks partook of the nature of Catalepsy; and, with that view, I prescribed Vol. Alkali, Ether, the fetid Gums, preparations of Steel, of Zinc and of Copper, and Bark and Valerian in substance, and Opium, &c. After some weeks passed in the use of the foregoing medicines, the accessions disappeared for two or three months, and X. Y. appeared to enjoy perfect health. But how far this disappearance was to be ascribed to medicine as such, remained doubtful. After the time mentioned, and upon the return of the complaint last Autumn, X. Y. wrote to me again, requesting my farther assistance, and stating that the attacks were of the same nature and character as before, excepting that sometimes

times they seemed to be induced by little occurrences, such as very sudden noises, or the unexpected visit of a friend. These circumstances seemed to shew some admixture of hysterical affection. She was then desired to take some preparation of Steel and Bark and Valerian in substance. These medicines producing no particular advantage, she went to the sea side, with a view to bathing and the sea air, which procured temporary relief. The attacks, however, continued to return at intervals, with some variation of symptoms, such as the inability of opening the eyelids, and loss of speech for many hours together, although possessing every other power in the same degree as in health. In this way X. Y. passed the last winter, experiencing similar accessions at uncertain intervals. But during last January or February, as I had never seen her in any of these attacks, she was induced to come from the country for a few weeks, to be more immediately under my direction, and to give me an opportunity of seeing the complaint. Upon my name being announced at my first visit, an occurrence of the disorder took place—she fell back upon the sofa, and remained motionless for some minutes, the pulse being undisturbed and regular, the colour of the countenance natural, and the respiration unaffected; and from this state she recovered in an instant, as if nothing had happened, and in full possession of the powers of body and mind. During the time she was under my immediate care, I frequently witnessed similar paroxysms when she was seated, accompanied with rigidity of all, or of one or more of the extremities, and for a longer or shorter period, the limbs remaining in the position in which the seizure took place; and this position would immoveably remain the same, although, during the seizure, sleep should supervene: at times it happened, that the cataleptic state would come on during sleep. Thus, I have known one of the upper extremities caught nearly at right angles with the trunk of the body, at the instant of the attack, when X. Y. has been awake; and, sleep coming on during the seizure, the limb has retained the same position till the dissolution of the attack. I have also seen the complaint come on as she was walking across the room, when she would remain standing and motionless, with rigidity of the lower limbs for some time, but retaining frequently the use of the arms, and the power of speaking.

I have seen the same rigidity suddenly affect the muscles of the head and neck, upon the head being turned towards the shoulder to observe a person entering the room, in which position it would remain fixed for some time; and I have known the speech leave her entirely for forty-eight hours, although, during that time, she was able to walk three or four miles without fatigue. Indeed,
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the foregoing attacks scarcely ever prevented her from taking daily exercise, as, after they went off, she never felt any marked inability of exertion. And to this list of irregularities of the influence of volition over the muscles, I may add, that at times she has been free from every other symptom of the attack, but the entire inability of shutting the eyelids; and at one time, for a few days, there seems to have been something of the irregularity of the motion of the extremities that characterizes St Vitus's Dance, by which soon went off.

When in Norwich, X. Y. tried large doses of Volatile Alkali, Galbanum, small doses of Calomel, and some preparations of Steel, without any advantage; and she tried the Tincture of Digitalis as an antispasmodic, and also, by way of interrupting the wonted succession of the actions of the body, a strong Emetic was given, but with apparent disadvantage. I cannot say that she returned home much, if at all benefited; for, since her return, the complaint has occurred at uncertain intervals, and she had recourse to Electricity as a source of probable relief, but without benefit.

During the last two or three months, she has been travelling through different parts of England; keeping her mind constantly and agreeably occupied, by frequent change of delightful and interesting scenery, and thus withdrawing her attention as much as possible from the apprehension of a visit from her troublesome and fantastic complaint. This plan has been productive of apparent advantage; for, during these last two months, she has experienced only one or two very trifling attacks of her complaint.

I shall conclude this detail by remarking, that X. Y. is about thirty years of age, unmarried, has blue eyes, a complexion rather fair than florid, and hair of a light brown colour. There has never been any irregularity in the menstrual discharge, nor has she ever suffered from any habitual irregularity of the bowels; she has never been harassed by hysterical complaints; and her mind is characterised by that desirable composure and firmness which is little favourable to attacks of this nature, or to spasmodic affections in general.

Many and curious are the speculations suggested to the mind, by reflecting on the phenomena of the present and similar cases. It may be questioned, whether Catalepsy has been correctly arranged by Sauvages and Cullen, under the order *Comata* in the class *Neuroses*. There is one general fact to be collected from all such cases, which is, that the cause of these phenomena is intimately connected with that faculty of the mind termed *Volition*. And what is remarkable and meriting attention, the same kind

kind and degree of action, whether of flexion or extension, that this power called volition is exerting over the voluntary muscles at the moment of the accession, is immoveably preserved till the termination of the attack. Thus the diffusive current of volition is, as it were, stopt or frozen up, and its course through the muscles becomes fixed, and remains precisely in the same state, till the spell that fetters its influence is dissolved, and the seizure goes off.

I am aware, that the phenomena occurring in cases of Catalepsy, have appeared so strange and inexplicable to some medical men of great judgment who have never seen the disease, (among whom *Dr Cullen* may be mentioned), as to have created some doubt and suspicion about their reality. Of their existence, however, my individual experience has given repeated proof; and I may remark farther, that this affection is by no means confined to the female character, as I have seen two strongly marked cases in males. Neither does it occur particularly in hysterical habits, or where great susceptibility of impressions predominate; on the contrary, a degree of slowness to action, or inirritability of the system, seems to have accompanied the cases, and marked the character of those that have fallen under my care. These remarks are peculiarly exemplified in the character of X. Y., whose fibre by nature is endowed with no great mobility, who possesses great sedateness and calmness of mind, and with whom a correct education has extended the empire of reason to a great degree, so as to protect her from those morbid associations that have been deemed sufficient to constitute the hysterical character, and even to form complaints of a convulsive nature. In this case, too, the strong affections of mind, as exciting causes of disease, were silent and inactive.

November 1804.

R. L.

VIII.

A Case of Enteritis; with Remarks. By Mr James Rumfey of Amerisham, Member of the Royal College of Surgeons, London, and of the Royal Medical Society of Edinburgh.

IN November 1802, R—— B——, an athletic farmer, aged 25, was taken ill with severe pain of the belly, which was tense, and sore to the touch;—vomiting, and fever, the bowels being constipated. Repeated doses of Calomel and Saline purgatives were given to him, without effect. The second day of his illness,

ness, he appeared much worse. Every thing was rejected from the stomach; and enemata produced no relief. He was then bled by the arm to the extent of nearly thirty ounces (the blood being very fizy), which was immediately followed by universal sweat and faintness; and within an hour he had a very copious fecal evacuation. The disease appeared to be at once subdued, all the symptoms quickly disappearing, although they had previously been exceedingly severe. That he might suffer no relapse, a large blister was applied to the abdomen, and strict abstinence was at the same time enjoined. But no return of any symptom happened.

It might perhaps be thought presumptuous to suggest any variation of the treatment of a serious disease from the result of a single case. Enteritis, however, is neither so uncommon a disease in itself, nor is it so unfrequently followed by a fatal event, but that the mention of any circumstances which place its treatment in a new light may be of use. The direct and immediate success of a copious bleeding, in the present instance, in which the other remedies could not be supposed to have any part, is the circumstance which I here propose for consideration. It is known that, in the usual order of proceeding in cases of Enteritis, purgative medicines are thought essential to the plan; and bleeding, though considered as of the greatest importance, is not always so employed as to produce a powerful impression upon the system at large. But, would not the entire omission of the former, and a more vigorous use of the latter, with its auxiliaries, consist better with our real notion of the nature of the disease? We believe it to be a simple inflammation of parts endowed with great sensibility, and in which inflammation cannot take place without an interruption to their functions. We know also that, in other inflammations, all things are carefully avoided which might irritate or increase the actions of the parts affected. Constipation is a necessary effect of inflammation of the bowels, as vomiting is of Gastritis. The principle of disease, the cause of all the symptoms, is in both the same; yet we do not expect to cure Gastritis by an emetic, though that may in some instances be necessary for the removal of the exciting cause. Probably the attention therefore ought to be directed entirely to the subduing of the inflammation, without regard to the constipation, which will end with the inflammation, and which may be called an accidental symptom, and, comparatively with its cause, of small importance. For although the bowels cannot be long inflamed without the greatest danger to life, constipation of itself often continues many days without serious inconvenience. It may be said that an accumulation of feces

in the bowels, although not the cause of Enteritis, may aggravate the symptoms, and that therefore purgative medicines are necessary. Certainly it would be better to have the bowels free, if this could be obtained without a risk of failure. But the question here asked is this: As the effect of purgative medicines in Enteritis is by no means certain, and as the bowels are incapacitated from the performance of their functions by *inflammation alone*, would it not be better to avoid whatever must do harm if its intention fails, and to rely solely on the common means of removing inflammation? With this view, venesection *ad deliquium*, the warm bath, the application of leeches, and afterward of blisters, to the abdomen, with as complete abstinence as possible, not only from nutritious matters, but even from the thinnest liquids, used according to the violence of the disease, would afford perhaps a reasonable prospect of subduing Enteritis.

Notes on Mr Rumsey's Case.

As some cases have occurred within the knowledge of the Editors, which were of a similar nature, and tend to corroborate the conclusions of Mr Rumsey, they have considered this case as not of solitary authority. The inferences of successful practice, as well as of rational theory, suggest that the constipation, which is the effect, and not the cause of the disease, should not be the symptom first attended to, and that additional irritation should be cautiously added to a membrane in a state of acute inflammation, before the means of subduing it have been vigorously used.

P A R T II.

CRITICAL ANALYSIS.

I.

Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Fever and Febrile Diseases, whether applied to the Surface of the Body, or used internally. By James Currie, M. D. F. R. S. Physician in Liverpool, and Fellow of the Royal College of Physicians, Edinburgh. Vol. II. Third Edition: Liverpool, 1804.

AT the commencement of our Analysis of Books, it is with pleasure we undertake to give some account of one of the most valuable which has ever been published. The first volume of *Dr Currie's Medical Reports* must be familiar to all our readers: the opinions it contains, the practice it inculcates, and the enlightened views which it displays, must have rendered it a favourite work with all those who look forward with confidence and zeal to the advancement of medical knowledge. It is unnecessary to give any abstract of the well-known contents of the first volume. The additional matter consists of two new cases of *Tetanus*, both arising from wounds, both extremely formidable in their symptoms, and both terminating happily. In these cases, the cold and tepid affusion formed an important part of the very judicious treatment. The other new matter which we have noticed, consists of some valuable remarks given in the form of notes, and an account of some experiments on inhalation by the skin, which appear favourable to our author's peculiar opinions on this subject. But neither these experiments made by Dr Roussieu at Philadelphia, nor the slender testimony of Seguin, nor all the evidence at present before us, are sufficient to determine the question respecting cutaneous absorption. The speedy and effectual mode of affecting the system by mercury without friction, as by fumigation, according to the method proposed by *Lalouette*, seems to furnish reason for doubting the accuracy of some of the experiments made by Dr Roussieu. The vapours are not inhaled by the lungs during

ing this ingenious process of fumigation, because the head is cautiously excluded from the machine. To enter farther upon this subject would lead us beyond our limits, and take us away from more important parts of this improved edition. Before proceeding, however, it may be proper to remark, that the second volume is a continuation of the first, and may be had separately by those who already possess the edition of 1798.

This *second volume* contains the author's experience of the cold and tepid affusion, during five years of extensive and accurate observation, subsequent to the publication of the former part of this work. Many additional communications are here given from different practitioners in different parts of the world. The result of this general and multiplied experience is highly satisfactory: the extensive appeal here made to numerous and well-authenticated facts is such, as must leave a strong impression on impartial readers in favour of Dr Currie's practice and opinions. Every communication confirms the account formerly stated of the general efficacy of this remedy, and gives the author additional reason to affirm, 'that, used in the three first days of fever, the cold affusion very generally stops the disease—that the same happy effects sometimes follow its use on the fourth, or even fifth day, but seldom later—that even in the subsequent stages, where the heat continues preternaturally great, and the skin dry, it is of great and manifest advantage, almost immediately relieving the most distressing symptoms, particularly restlessness and delirium, and conducting the disease to a *safe and speedier issue*.'

In the febrile complaints of children, the tepid affusion proves an invaluable remedy. In fevers accompanied by, or originating in high local inflammation, the author does not recommend the use of the cold or tepid affusion, or cold drink. We wish much that he had stated the grounds of his objection to this practice in such cases, and given the result of his experience which has occasioned his indecision on this interesting question. The following are some of the advantages attending the method of treating febrile diseases by the cold affusion, which more enlarged experience has discovered and confirmed. In no one instance has it appeared to be injurious. In the early stages, it stops the disease—it strengthens the security in the means of prevention—it may be employed in fevers, even where catarrhal symptoms are present—it has been used in fevers of warm climates on patients under salivation, not only with impunity, but advantage—it has been applied with the most manifest advantage in *Scarlatina*, and supercedes, in a great measure, the use of bark and wine in this formidable disease, as well as in Typhus—it has been employed in the eruptive stage of Measles in four cases, though not by design;

sign; and the disease that followed was singularly mild. Lastly, it was used in the *Influenza* by Dr Currie on himself, with marked advantage. There are cases, however, of Scarlatina, as well as of Small-pox, which do not receive the usual advantages from cold and tepid affusion. In these, the morbid heat is not excessive during the eruptive stage, and where great malignity and apparent putrescency appear from the first beginning of the disorder. How is a case of Scarlatina of this sort to be treated? In the ordinary forms of this complaint, where the heat rises to the highest degree observed in the range of the animal temperature of the human body, sometimes up to 112° Fahrenheit, the application of the cold affusion is fairly and obviously indicated, and numerous testimonies confirm the practical utility of it. Our author's experience is very striking. In 150 cases of Scarlatina, during three years, he has followed this practice with a degree of success almost invariable. No practical observations are given respecting those more aggravated and complex forms of this disease, which too often baffle every attempt to check the morbid phenomena.

In Chap. XXIII. Dr Currie details some of the communications he has received respecting the cold affusion, in different parts of Great Britain. In London, this method of treating fevers seems to have been received with more frigid indifference than in other places. This circumstance, if it were necessary, the author thinks, might be easily explained. It is to be hoped that these timid prejudices will be daily exploded, by the increasing evidence of the advantages of such bold and decisive measures. An account is given of the successful use of cold affusion, in some cases of Typhus, at the House of Recovery in London. An abstract of similar accounts is given of its use in Edinburgh, Norwich, and Birmingham. In the last mentioned of these places, it has been advantageously employed on persons in fever, labouring under all the accumulated evils of moral and physical distress. One passage in Mr Marshall's letter, sets in a strong point of view the superiority of the affusion, when compared with ablutions. From the end of July to the 31st of October, he employed the cold affusion in *sixty-four cases* of fever; in sixty of these the disease was arrested, the remedy seldom being required more than twice or thrice; and in no one case was it used more than four times. In the other four cases, the disease being advanced, was not stopped by the remedy, though the patients ultimately recovered, (p. 492.) Mr Marshall's situation, as surgeon to a militia regiment, afforded him the most favourable opportunities for employing this remedy at the very beginning of the disease; and his success seems to have been equal to the opportunities he

has had for making these trials on such an ample scale. The fevers in the army and navy are most likely to be removed by these means. The class of patients are well suited, in every respect, for such active practice; and the diseases may be combated at their first onset, if the men are narrowly watched, as they ought always to be, during the prevalence of any epidemic. In the fevers of the West Indies, especially when young and vigorous Europeans are attacked, early bleeding and antimonials may be employed with advantage, preparatory to the cold affusion. The great success of Mr Wilson's practice leads to this general inference. (p. 499.)

The narratives of several navy surgeons are interesting, and well deserve perusal. A long letter from *Dr Gomez*, physician to the Portuguese fleet, contains many valuable remarks, along with abundant illustration of the efficacy of the general plan, in reducing morbid heat, and interrupting the associated morbid febrile actions.

The medium temperature of the water in Barbadoes is 74° or 75° Fahrenheit; and this appears equally efficacious as a colder application. In the fevers of the West Indies, it has been found very grateful and advantageous. However, it did not succeed, according to Mr M'Gregor's account, in the fever most common in the East Indies. The failure, in some cases, stated by Dr Maclean, is obviously to be imputed to its improper administration. The period and manner he adopted is quite opposite to the rules laid down by our author. At Philadelphia, the cold bath was used and recommended in epidemic fever by Dr Stevens; but it was soon abandoned. No thermometrical observations were regarded: its success could only be precarious and accidental, as it was employed in the latter stages of the disease as a stimulant and tonic. It has lately been used with success in Virginia, according to the rules laid down in the first volume of this work.

At the conclusion of these various communications, Dr Currie has offered a few general reflections on the reciprocal influence of the functions of digestion, respiration, and perspiration on each other. What is here said, excites our desire to hear more. Upon this mutual dependence of three principal functions, upon the reciprocal aid which they receive and bestow, depends the healthy state of the system. And it is self-evident, that a suitable harmony must exist between them, since the modifications of any one function will influence the actions of the other. Although the author does not consider fever as consisting merely of a series of phenomena, originating in a morbid accumulation of heat, yet he evidently looks upon it as an object of first importance. And so it undoubtedly is; for increased temperature is accompanied by increased action of the vascular system; and this accumulation of morbid

morbid heat then becomes a source of irritation, and acts as a cause of its own continuance, its increase, and supply. If allowed to continue for any great length of time, we observe that heat debilitates the system, diffuses itself over every part of the body, deranges the functions, decomposes the animal matter, and destroys the organization. Cold water and cool air diminish the force of this stimulus, and prove highly grateful and salutary. We should have been glad, if the learned author had insisted more on the comparative merits of *affusion* and *ablution*. These two methods are generally confounded together, and their effects referred to the simple abstraction of heat. After the third day of fever, they seem to act solely in this manner: their influence on the sensations is lost, or not sufficient to interrupt the series of morbid actions; the heat is removed in the same degree by washing the surface of the body with a wetted sponge, or cloths dipped in water, as by pouring cold water on the naked body; and the patient is relieved, as we have often witnessed, exactly the same by one mode of treatment as by the other. But, in the early stages of the disease, the superior efficacy of the affusion is unquestionable; its operation extends beyond the mere abstraction of heat from the surface; it acts powerfully on the nervous system. The *magic charm* so frequently ascribed to this remedy, appears to be owing to its removing so effectually, in the beginning of febrile diseases, the uneasy sensation of heat, and thus indirectly recruiting the animal powers. Its most striking effect is, its inducing *sleep*. When any disagreeable sensation is removed, we know that sleep soon follows. The sudden removal of any irritation, as the intervals of pain in parturition, the ceasing of the toothach, the abatement of violent pain in colic, &c. are illustrations of this general law.

The experience of Dr Currie, and that of his correspondents (especially the excellent letter of Mr Nagle), and every case that we have witnessed, all agree in confirming this general notion. For wherever the cold affusion has operated like magic in arresting the progress of the disease at once, the patient has always sunk into a sound and refreshing sleep, from which he awakes like a new creature. Even in cases where the cold affusion was by some circumstances forbidden, if applied, and if sleep were induced by it, the patient became immediately relieved. Thus, in Mr Dalrymple's well-detailed case, though the shock was unexpected and severe, and the patient appeared to suffer much from it, yet, 'in a few minutes afterwards, his pulse was examined, and found to beat 100 strokes in a minute; his heat, which an accident prevented me from accurately measuring, was most sensibly diminished; his mind became calm and clear; he expressed

a feeling of regret for the trouble he occasioned to those about him; drank a glass of warm wine and water, and in about half an hour he sunk into a deep sleep, in which he continued nearly eight hours.'

Where the affusion does not succeed in removing the symptoms, sleep is not induced by it. The tepid affusion did not produce its soothing influence in the case of the lady (page 404.); it was not, as usual, effectual in producing tranquillity and sleep. One reason why it did not succeed in the fever accompanied by dysenteric symptoms, might be, the irritation in the bowels, which prevented or disturbed its tranquillizing effects. In all the cases related in our author's first publication, easy, tranquil or profound sleep, with perspiration or gentle diaphoresis, always accompanied the action of the affusion in cutting short the disease. In that interesting case, recorded p. 48, vol. I. where the cold affusion proved ineffectual, no sleep or diaphoresis followed the application. This effect of the remedy becomes the more important, because all the ordinary means of inducing sleep often fail completely in fever: the influence of Opium is counteracted by the morbid accumulation of heat; the restlessness and febrile anxiety is increased, instead of being removed by this medicine.

Among so many important particulars contained in these additional Reports, some must be omitted, and many perhaps overlooked, in such a general sketch as this we have attempted to give. We shall only notice farther, that Dr Currie speaks, in strong terms of approbation, respecting the use of *Digitalis* in the diseases belonging to the class *Phlegmasiæ*, as well as in *Hæmorrhagiæ*; and he has added four letters as an appendix, on subjects of local and less general importance;—one to Dr Clarke on Fever Wards; two on a plan for building a Lunatic Asylum; and one on the use of Nitric Acid in Syphilis.

These *Medical Reports* should be read by all practitioners. The precepts which they inculcate should be tried and pursued—the style and manner should be imitated. We do not find ourselves called upon to vindicate the practice, because, unlike most valuable propositions in physic, it has never been attacked. Through timidity, and a prejudice more owing to words than any thing else, it may have been neglected, but it has never yet been attempted to be controverted.

It has, besides, this peculiar and immense advantage over every other remedy, that in every part of the globe an inexhaustible supply is always at hand, affording a strong presumption in favour of the opinion, that nature has furnished an antidote in every country for the diseases which prevail there. *Boerhaave* was unwilling to consent, and *Voltaire* thought it ridiculous to seek a remedy, in South America, for the intermittent fever which prevails

vails in the north of Europe. For the cure of our most common febrile diseases, it is no longer necessary to ransack the laboratory of the chemist, or to traverse the mountains of Peru.

II.

An Essay, Medical, Philosophical and Chemical, on Drunkenness, and its Effects on the Human Body. By Thomas Trotter, M. D. late Physician to his Majesty's Fleet, &c. 8vo. London, 1804.

WHEN we consider the curious and interesting phenomena which present themselves in the paroxysm of intoxication, the long train of evils, and catalogue of diseases to which the abuse of vinous liquors gives rise, we must acknowledge that the subject is of the highest importance, and well merits the attention of the philosopher, of the statesman, and of the physician.

The outline of the Essay now before us, was the subject of the author's inaugural dissertation, published at Edinburgh on obtaining the degree of Doctor of Medicine in the year 1788. On this occasion, he was anxious to produce something that had never been noticed by any former graduate. Ebriety was chosen; and the work, we are now informed, delighted one Doctor, was well received by the Professors, was perused with great pleasure by Dr Gregory, gave rise to some elegant allusions and facetious remarks from Dr Cullen, and obtained for the author the thanks of the Humane Society. This general approbation determined Dr Trotter to enlarge his plan, and at some future period to present his observations to the public in an English dress.

Though Dr Trotter may not have been anticipated by any monographic essay on Drunkenness, we cannot allow him his whole claim to originality. Original he certainly is in some of his opinions, which we shall have occasion to examine. Neither can we admit the validity of the complaint—of the little assistance he has derived from the writings of others. The symptoms and effects of drunkenness have often been described. By every practical writer, ebriety, and the abuse of vinous liquors, have been marked as causes of disease; and, in these times, the modus operandi of alcohol has been amply discussed.

Dr Trotter, considering drunkenness as a disease of which he is to give the history and cure, divides his subject naturally enough into the following heads: 1st, Definition of drunkenness; 2^d, The phenomena, or symptoms of drunkenness; 3^d, In what manner

manner vinous spirit affects the living body; 4th, The catalogue of diseases induced by drunkenness; 5th, The method of correcting the habit of intoxication, and of treating the drunken paroxysm.

Drunkenness, as a disease, it is remarked, partakes both of delirium, and of coma. The most common characteristic of the paroxysm is delirium, which generally terminates in a partial or total abolition of the powers of sense and motion. It is proposed, therefore, to adopt the following definition: 'Post vinum immodice assumptum, Delirium et Coma;' or, 'Imbecility of intellect, erroneous judgment, violent emotions, and loss of sense and motion after the immoderate use of vinous liquors.' It is often important to be able to decide with certainty on the presence of intoxication; it would be fortunate, therefore, if any number of symptoms, collected into the form of a definition, could enable us to do so. But the definition here given embraces only an extreme case, without marking the various shades and appearances which take place in different individuals in the progress of intoxication. Considered in the light of a nosological definition, nothing is gained by introducing the cause; for, wherever any doubt arises, this is always supposed to be unknown. The symptoms of delirium and coma may be produced by various causes, by opium and narcotics. But a mistake of a more dangerous nature may be committed, as we learn from the following important remark. 'There is a species of delirium that often attends the early accession of typhous fever from contagion, that I have known to be mistaken for ebriety. Among seamen and soldiers, where habits of intoxication are common, it will sometimes require nice discernment to decide; for the vacant stare in the countenance, the look of idiotism, incoherent speech, faltering voice, and tottering walk, are so alike in both cases, that the naval and military surgeon ought at all times to be very cautious how he gives up a man to punishment under these suspicious appearances.'

Our author next proceeds to give a more detailed account of the phenomena and symptoms of drunkenness. These however are so well known, and so often witnessed, as to render it quite unnecessary to follow him through his long and classical description of the drunken paroxysm.

After detailing the effects of inebriation, Dr Trotter enters into the investigation of the manner in which vinous spirit affects the body. Here Dr Trotter seems inclined to adopt the opinion of those who hold all narcotics to be in the first instance stimulant. But although some intoxicating articles are unquestionably stimulant; yet no one surely can deny that many of the most powerful

powerful of the inebriating kind shew no influence whatever either in inducing contraction, exciting pain, or preventing sleep—the true characteristics of stimulants; while, on the other hand, many of the strongest stimulants, whether of the chemical or mechanical kind, have no narcotic powers. Cantharides, and the essential oil of peppermint are powerful stimulants, yet never were known to produce intoxication. There is therefore no necessary connexion between the stimulant and narcotic powers of substances.

The intoxicating quality of vinous liquors, however, depends upon the alcohol which they contain, the first effects of which are stimulant and exciting; this excitement is soon followed by delirium and loss of voluntary motion, and passes at length into that state of debility which has been called with some propriety *indirect*. But though the baneful effects of vinous liquors depend chiefly upon the alcohol which they contain, there are some whose hurtful tendency is increased by other circumstances. Thus some beers, and particularly porter, are rendered more noxious by the narcotics and bitters which enter into their composition. Hence Dr Trotter remarks, we believe with truth, that malt-liquor drinkers are prone to apoplexy and palsy, and purl drinkers in a still greater degree.

Whatever may be the nature of mind, whatever the connexion between body and mind, it is certain that the intellectual faculties may be affected and deranged by disease, and by other changes induced on the material organs of our system. The stimulant action of ardent spirit is first exerted on the stomach, and spreads by sympathy from thence to the sensorium commune, and the rest of the system.

But Dr Trotter is also of opinion that much of the liquor enters the circulation, and gives there an additional stimulus. Of this, however, we see no proof. The full effects of intoxication may be induced so suddenly, so instantaneously indeed, by a large doze of wine, that all belief of any portion of it having entered the circulation is completely destroyed. Nor is there any better reason for admitting this, when intoxication has taken place more gradually. The short duration of the paroxysm also, and the speedy relief obtained from vomiting, are against the supposition. Besides, it is confessed that all the symptoms of intoxication are equally occasioned by a few grains of any narcotic. It may also be urged, that neither the blood, nor any of the excretions, when examined, give any indication of the presence of the alcohol, or intoxicating substance.

It is surely but an indifferent argument to say, 'we are acquainted with no particular appetency inherent in the lacteal vessels'

fels: that can confine the absorption only to mild and bland fluids.' The truth however is, that such an appetency has actually been demonstrated. It was found by experiment, that some colouring matters, as madder and indigo, were absorbed by the lacteals, which refused to take up the sulphate of iron, or the solution of tannin.

There is little doubt, we think, that wine, beer, or other intoxicating liquors received into the stomach, are gradually decomposed and digested, so as to be soon completely changed. Nor, on any other supposition, can the natural termination of the drunken paroxysm be accounted for.

Another argument adduced by Dr Trotter we must regard as hypothetical. 'That vinous spirits mix with the blood we know to a certainty, from the hydrogenous gas which escapes from the lungs, to be perceived in the factor of the breath.' Surely the factor of the breath is no proof of the disengagement of hydrogenous gas from the lungs. The factor itself is besides most remarkable, not during the paroxysm of intoxication, but afterwards when the patient is suffering from the secondary effects, from debility nausea, and anorexia. The factor of the breath is the sign of his charged and disordered stomach.

Indeed, we shall look in vain for simplicity and unity in our author's explanation of the phenomena of intoxication. Not contented with the stimulant and narcotic effects of vinous spirits exerted on the stomach, he makes these, without any good reason, enter the circulation; and, as if all this were not sufficient, he has now recourse to the mechanical compression of the brain by the surcharged state of the blood vessels, which, he thinks, accounts for the comatose affection which attends ebriety; and, again, having remarked that strong ale and porter drinkers become fat and stupid, we are told that 'the blood vessels would appear to be clogged with a dense blood.' But besides the intoxicating effects of alcohol, it has also, according to Dr Trotter, a *chemical operation* on the human body. That the continued abuse of spirituous liquors should, by deranging and debilitating the powers of life, affect also, in some degree, the chemical composition of the body, might perhaps be, without difficulty, admitted. But that alcohol directly deoxydates the blood, and charges the circulating mass with hydrogen, we are disposed to doubt. We have already concisely stated our reasons for concluding that alcohol is never absorbed by the lacteals, and we are certain it has never been detected in the circulating fluid, nor in any of the secretions. On the other hand, there is evidence that wine, beer, and other intoxicating liquors received into the stomach, are decomposed, and new compounds formed from their elements.

But

But the blood of drunkards, Dr Trotter informs us, is charged with hydrogen, the most abundant element of alcohol; because their blood approaches to the colour of venous, being darker than usual; because hydrogenous gas seems to be sent off from the lungs in a disengaged state, and is often so pure in its kind, from the mouth of a dram-drinker, that it is easily inflamed on the approach of a candle; because Mr Spalding, the celebrated diver, always found, after drinking spirits, the air in his bell consumed in a shorter time than when he drank water. To this reasoning, it may be sufficient to reply, that the darker colour of the blood is no proof of an over charge of hydrogen; as this change of colour may be effected, and does in fact often take place, without the introduction of any new principle, and merely by a new arrangement, or more intimate combination of its elements, as is proved by the change from the arterial to the venous colour observed in blood kept in hermetically sealed vessels, or in vacuo. But we farther suspect that Dr Trotter's observation has not been made on the circulating mass, but inferred from the livid and bloated countenance of drunkards, which proceeds from the languid circulation in the veins.

The factor of the breath, we have observed, is no proof of the evolution of hydrogenous gas from the lungs. And we are doubtful of the *breath* of a dram-drinker being so inflammable. We have seen sailors perform this *trick* immediately after swallowing ardent spirits, but never at any other time.

There is nothing singular in the fact related on the authority of Spalding. Whatever increases the circulation of the blood, as food recently taken, exercise, the hot stage of fever, increases also the consumption of air in respiration. No conclusion, therefore, in favour of the hypothesis, can be drawn from that circumstance.

The view which Dr Trotter has taken of the chemical operation of alcohol, leads him naturally enough to what he terms the most important part of this doctrine, *the combustion of the human body*, produced by the long and immoderate use of spirituous liquors. On this subject we may remark, that the evidence for the spontaneous combustion of the body is next to nothing: and the cases collected by Pierre Aimé Lair, prove only that drunken old women have fallen into the fire, or set fire to their clothes, and perished in consequence. 'The combustion took place only in women'—'These women were far advanced in life'—'Their bodies did not take fire spontaneously, but were burnt by accident.'

It is in vain, Dr Trotter well observes, to request implicit faith to this narrative; and it matters little, therefore, in our opinion, what

what explanation the present state of chemistry might enable us to give of it.

Having thus stated his opinion as to the intoxicating and chemical operation of ardent spirit on the human body, Dr Trotter proceeds to consider the diseases which are induced by drunkenness.

1. Diseases which appear during the paroxysm of drunkenness. Apoplexy; Hysterics; Convulsions; Oneirodynia; and fearful dreams.
2. Diseases induced by habitual intoxication. Phrenitis; Pleuritis; Gastritis; Ophthalmia; Carbuncles; Hepatitis; Podagra; Scirrhus; Icterus; Dyspepsia; Hydrops; Tabes and Atrophia; Syncope and Palpitation; Diabetes; Locked Jaw; Palsy; Ulcers; Madness and Idiotism; Melancholy; Impotency, and abolition of the Sexual Appetite; Premature old age.

Let the drunkard contemplate this frightful catalogue, and dash the cup from his lips! On several of these diseases, Dr Trotter takes occasion to offer some pertinent and useful remarks; after which, he proceeds to point out the method of correcting the habit of intoxication.

The seeds of this evil habit, he observes, are, like many others, sown in infancy; and he recommends that spirits, wine, and fermented liquors of all kinds, should be excluded from the diet of infancy, childhood, and youth. He is of opinion, that no man in health can need wine till he arrives at forty. He may then begin with two glasses in the day; at fifty he may add two more; and at sixty he may go the length of six glasses; but this quantity he should not exceed, even although he should live to a hundred. All this is indeed very particular.

A custom has long prevailed, in this and other countries, of drinking wine while at dinner. This Dr Trotter considers as downright pampering, as vitiating taste and healthful appetite, and therefore, he thinks, should be totally relinquished. In this particular, we own we do not subscribe to the Doctor's unqualified condemnation. We like the custom; and would rather imitate the example of our neighbours of the Continent, and abridge the allowance after dinner: For although we are far from denying, that excess in the use of wine, even during meals, may be pernicious; yet, in our opinion, one or two glasses may be taken during dinner, even by those not arrived at their fortieth year, not only with impunity, but even with advantage.

Another circumstance which, according to Dr Trotter, has often produced the propensity to drinking, is the too frequent use of spirituous tinctures, rashly prescribed as medicines for hysterical,

cal and hypochondriacal complaints. The custom of handing round cordials at time of dinner is also against all rules of temperance; and the use of liqueurs, particularly of Noyau, should, he thinks, be totally abstained from. It must be confessed, however, that these practices very rarely, if ever, operate with the lower class, among whom this pernicious habit is particularly prevalent. We are ready, however, most cordially to subscribe to our author's sentiment, that as the habit of ebriety is so difficult to be overcome, from whatever causes it may have begun, the best maxim is, '*Obsta principiis.*' In this way, perhaps, much might be done by the exertions of Government, and particularly by rendering the access to dram-drinking a less easy matter for the lower class. Among other means of preventing drunkenness, might be suggested additional duties on spirits, and additional regulations with regard to the sale of spirits, particularly by retail.

However seducing the love of inordinate drinking may be, like other bad habits, mankind seldom get into it at once. In this vice there is also a gradation; and it is at the commencement that the good sense of the individual, and the advice of prudent friends, will have the greatest influence. When ebriety has become so far habitual, that disease appears, the physician is called in, and a most ungrateful task devolves upon him; for the disease is only to be effectually combated by the removal of its cause. In accomplishing this, the first great point to be obtained is the confidence of the patient; after which he may, with great advantage, represent the incurable maladies which flow from a continued course of intemperance.

It has been a doubt with some physicians, whether, even if the patient were willing, it would be proper all at once to leave off the use of wine or spirits. Dr Trotter, however, is decidedly of opinion, that this should be done in every instance, and that no disadvantage can result from it. For our own part, we think it impossible to lay down so general a rule, and believe that the conduct of the judicious practitioner must be regulated by circumstances. There are complaints originating from drunkenness, in which it would be dangerous all at once to deprive the patient of his accustomed stimulus. What cannot be accomplished at once, may sometimes be obtained gradually; and one stimulus, such as an essential oil, an aromatic powder, or even an aromatic tincture, may often be advantageously substituted to pure alcohol.

To strengthen the body debilitated by habits of intoxication, recourse, it is observed, may be had to the cold bath, chalybeate waters, exercise, and tonics. Acidity and flatulence are to be corrected by absorbents and bitters, such as magnesia and colomba.

When a diseased liver has arisen from drunkenness, Dr Trotter seems

seems very averse to a mercurial course. In the tubercular or scirrhus liver, he tells us, it has seldom appeared to him to be of any service, beyond its action in keeping the bowels open, when costiveness was to be guarded against. Our experience, however, does not lead us implicitly to adopt this conclusion: On the contrary, in more than one instance of scirrhus liver, complicated with dropsy, we have seen mercury employed with great advantage; and this we believe to be agreeable to the general observation of modern practitioners. Indeed, in such cases, we are not acquainted with any remedy of equal efficacy.

Our author concludes this essay with a few remarks on the best method of treating the drunken paroxysm; and here he thinks reliance is chiefly to be placed on the means of exciting vomiting. If the drunken person have so far lost the powers of sense and motion as to be unable to help himself, he ought to be placed in an arm chair where he cannot fall, or be laid in bed, with the head erect, and inclining a little to one side, for the purpose of facilitating vomiting; the best means of exciting which is, he informs us, by introducing a feather, or any other suitable substance, into the mouth, and tickling the fauces, till the contents of the stomach be fully evacuated. Besides vomiting, Dr Trotter also recommends that the bowels be immediately emptied by glysters. He observes, that if the face be much swollen, and the breathing stertorous, with the eyes fixed, and vessels turgid, there is danger of an instant fit of apoplexy. To us it seems very surprising, that, in such circumstances, Dr Trotter should express any doubt as to the propriety, and even absolute necessity, of immediate bloodletting, general and topical. The quantity of evacuation indeed must, in this as in every other disease in which bloodletting is employed, be regulated by the age, the habit, and the symptoms of the patient; and, after bloodletting, the application of a large blister to the head should not, we think, be omitted. How this practice has altogether escaped Dr Trotter's notice, we are at a loss to conjecture. He indeed advises, throughout the whole paroxysm of drunkenness, the application to the head and temples, of cold water, rectified spirits of wine, or sulphuric æther. But although these practices may be of some use in counteracting headach arising from slighter degrees of intoxication, yet little dependence can, we think, be put upon them in the prevention, and still less in the removal of apoplexy. Dr Trotter, in the circumstances mentioned above, also suggests the use of the shower-bath, and the clay-cap, sometimes used in maniacal cases. But he very properly observes, that the application of cold water to the head is not at all times a safe remedy. The case of an officer is mentioned, who, in the second stage of the drunken

drunken paroxysm, plunged his head into a bucket of cold water, and was soon after seized with phrenitis, which terminated fatally.

In concluding our account of the Essay on Drunkenness, we have only farther to observe, that although we have had occasion to object to several of the opinions advanced by the ingenious author, we have perused his volume with much satisfaction, and not without emolument.

The prevention of those evils which arise from the abuse of vinous liquors, is certainly a subject of the utmost importance, and claims the most serious attention, not only from the medical practitioner, but from every wise and well regulated government.

III.

Practical Observations on the Treatment of Strictures in the Urethra, and in the Oesophagus. By Everard Home, Esq. F. R. S. Surgeon to St George's Hospital. Vol. II. London, 1803. 8vo. pp. 424.

THE labours of Mr Home in this department of surgery, are already well known to the generality of practitioners. To him we are indebted not only for recommending to general use an improved method of cure, but for the most accurate and complete history of strictures in the Urethra yet published.

Although a more deserved confidence has been placed in few remedies than in the bougie, by a steady and persevering use of which, Strictures may for the most part be greatly relieved, if not completely removed, yet it cannot be denied by those who have had much experience in these complaints, that their hopes have been often disappointed; that from the number and duration of the strictures, the process by the simple bougie was tedious, and sometimes ineffectual, or, from local or constitutional irritability, impracticable; and that, even when a cure seemed accomplished, relapses were not unfrequent.

From a knowledge of these disappointments, and of the anatomical structure of the diseased parts, the late Mr J. Hunter was led to propose the destruction of the stricture by the application of caustic; and the success which attended an attempt not altogether new, was such as to encourage a repetition of the practice.

The instrument first employed by Mr Hunter was a silver canula, through which, by means of a port-crayon, the caustic might

might be conveyed to the stricture, without the risk of hurting the sound parts of the urethra. But this instrument not yielding to the flexible canal of the urethra, did not admit the accurate application of the caustic to the middle of the stricture intended to be destroyed; and hence the side of the urethra was liable to be injured, and an oblique passage produced.

Mr Hunter, aware of the objections to his former method, had, for some years before his death, employed the armed bougie, which, with the improvements by Mr Home, is now so well known to surgeons. By means of the bougie, the caustic may be conducted directly to the stricture in any part of the urethra, and, in the hands of the experienced surgeon acquainted with the anatomy of the parts, without danger of those accidents to be apprehended from the inflexible canula. The advantages of the armed bougie have now indeed been fully confirmed by experience. Succeeding where the simple bougie has failed, it is more extensively useful, it is more effectual, and the cure more permanent; it is quicker in its operation, and in many cases milder than the mode of dilatation by the simple bougie. Great caution and delicacy, however, are necessary; nor can the caustic be safely committed to those not intimately acquainted with the anatomy and morbid structure of the parts. Indeed, from the difficulty and apparent risk of conducting the caustic through a considerable length of canal of such high sensibility and extensive sympathy as the urethra, and of confining its action to the stricture alone, it was not to be expected that this practice should be adopted the moment it was proposed, and that surgeons should all at once free themselves from apprehensions which, *a priori*, seemed so well grounded. It required, besides, a very ample experience to unfold the advantages of the Caustic in cases of Stricture where the bougie had failed, or could not be employed, from the extreme sensibility of the diseased organs, and to convince us that the caustic was, in such cases, more mild in its operation, and more extensively applicable than the unarmed bougie. Some hesitation, therefore, from apprehensions so natural, was to be looked for, from surgeons old in the accustomed practice. This reserve, however, even when active, should be treated with indulgence, and should not be classed with those narrow and selfish prejudices which obstruct the progress of improvement. We regret, therefore, that Mr Home, in the very midst of triumph, should lose temper, and so far forget himself as he appears to us to have done, in the introduction to the volume now before us. For we do not perceive, in the opinion given by Mr Bell in his work on the Venereal Disease, any provocation which can justify the publication of a correspondence which, under other circumstances, Mr Home says,

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he would have thought improper. Nor can we construe into a challenge, calling for a vindication of the opposite opinion, the present which Mr Bell made to Mr Home of his book. But Mr Bell, it seems, has, since this correspondence took place, had ample time, either publicly or privately, to avow his error, which however, greatly to the dissatisfaction of Mr Home, he has not done.

This correspondence is opened by a letter from Mr Bell, introducing a patient who was going to London to place himself under the care of Mr Home.

Mr Bell, in the most candid and honourable manner, states the circumstances of the case, and relates the means which had hitherto been ineffectually employed for the patient's relief. The strictures were of twenty years standing. The bladder was diseased, enlarged, hard and painful; the prostate gland was also enlarged; and the patient's strength was so reduced, that he could not be moved from bed. These symptoms, Mr Bell observes, could only be relieved by the removal of the strictures. Bougies were accordingly employed, and the passage was thus made completely pervious to the height of six inches and a half; but beyond this, neither the common bougie, nor the London bougie *armed with caustic*, could ever be passed, though all of them got as full a trial as was admissible in a constitution so very irritable; for, frequently, the slightest application even of a soft bougie, whether armed with *caustic* or not, excited a severe ague. He was recommended to remain in the country during the summer months; and having there recovered a great deal of flesh and strength, he was determined on going to London, to place himself under Mr Home's care, through whose assistance, Mr Bell sincerely hopes, he will get entirely well.

It appears, then, that Mr Bell, so far from showing an illiberal opposition to the armed bougie, had actually employed the caustic in this very case, which he certainly would not have done, if he had still considered the practice as dangerous, and not likely to answer the purpose. And though, from the state of the patient's health, his own attempts had failed, he yet expresses his hopes that, through Mr Home's assistance, 'he will get entirely well.' This, we think, might have satisfied Mr Home. The letter contains nothing provoking, nothing insulting. It should not naturally have given occasion to the triumphant and petulant answer returned, and now published by Mr Home. In this answer, our author reverts to the condemnation of his mode of treating Strictures, published by Mr Bell in his work on the Venereal Disease, which, he now observes, flattered him exceedingly, being an evidence upon record of his having acquired 'a more ex-

tensive knowledge of the disease, than had been attained by the surgeons of Edinburgh.' And after this liberal self-applause, he delicately assures Mr Bell, that success was hardly to be expected from the use of the caustic in his hands, while, with a compliment to Mr Bell's humanity, he adds, that five applications of the armed bougie, without the aid of internal medicines, had enabled the patient to pass a full-sized bougie into his own bladder, and that all his other complaints had left him.

Mr Home is well satisfied that the public should judge between him and his opponents. For our own part, while disposed to pay every just tribute of praise to the merits of Mr Home, we heartily condemn this instance of intemperate conduct, for which we cannot discover the smallest apology.

In a former volume, Mr Home had some years ago given a full account of the more common cases of stricture, and described at length, the method of treating them by caustic. A very extensive experience in this branch of practice now enables him to lay before the public another volume, explaining such varieties and complications of the disease as have come to his knowledge since the publication of the former.

A work so purely practical, composed entirely of observations derived from the author's own experience, and illustrated by a variety of cases, affords but little room for analysis or criticism. We shall content ourselves, therefore, with a very brief account of this interesting volume, which we cannot too much recommend to the attentive perusal of every surgeon.

The first chapter is dedicated to general observations.

Strictures of the urethra are accompanied not only by diseased actions of the organs more immediately associated with it, but by a variety of constitutional affections also, which are apt to be mistaken for idiopathic diseases. That these, however, are symptomatic of the condition of the urethra, has been determined, Mr Home remarks, in three different modes.

The first is, that patients are liable to them, while labouring under that disease; the second, that they very often are brought on in the course of a few hours, after an armed bougie has been applied to the stricture; and whenever they follow such an application, it has been found that the symptom then produced has, at a former period, been met with in the same patient. The third is, that after the removal of the strictures the symptoms disappear, although the patient had been liable to them for a number of years.

These constitutional symptoms are, regular paroxysms of intermittent fever; a state of general irritation; delirium; disorder of the

the stomach and bowels; sciatica; hysterics and epilepsy; attacks of erysipelas on the head and face; inflammation of the tonsils and throat; eruptions on the skin, &c. To the usual modes of treatment, these symptoms do not yield. The bark, for example, does not prevent the return of the intermittent paroxysm. The only medicine which Mr Home has found useful in this case, is a purgative draught.

Mr Home having formerly explained the nature of stricture in its more simple state, now observes, that a stricture in the urethra undergoes changes within itself, by which the cure is rendered more tedious, more difficult, and, in some instances, impossible. The membrane which forms the stricture becomes ligamentous, and sometimes acquires the hardness of cartilage: and, in some cases, this disposition to induration extends itself into the surrounding parts. Sometimes, again, the space between two strictures is diminished in capacity, and the membrane of the intermediate portion becomes thicker than the rest of the urethra, so as to form, in some respect, one continued stricture. And in the treatment of such cases, great address and experience is required in the application of the caustic, lest a false passage be formed in the space between the bulb of the urethra and the fundament.

The mode of treating strictures by caustic has now been in use for eight years, a time sufficient to enable Mr Home to draw some important conclusions respecting the consequences produced by it.

The following are the result of his experience.

‘ That it does not dispose the parts to take on any other disease is sufficiently established, as there is no one instance within my observation in which that has been the case.

‘ That the parts recover themselves after the use of the caustic, and acquire the natural smooth surface they originally possessed in common with the rest of the urethra, is also completely ascertained.

‘ That removing the stricture restores the parts to all their natural functions, has been proved by the effect on patients in a married state, who had for years palliated the symptoms by means of bougies, and during that period had not begot children, but who were afterwards capable of doing so during the same marriage.’

With regard to the permanency of the cure, Mr Home candidly acknowledges, that in many cases there has been a return.

Where the stricture has been removed in an early stage of the complaint, and no other disease has been since contracted, there is no probability of a relapse; but a fresh gonorrhœa, and the use of injections, may occasion a return. The gout, too, has a

singular influence over the urethra; insomuch, that a patient who has had strictures removed by the caustic, is liable to a return in almost every fit of that disease. Lastly, where the stricture has been of long standing, the parts to which the caustic has been repeatedly applied, become rigid and less pliant, from the consolidation of the coats of the urethra; and these parts being consequently less perfect in their natural action, remain in a middle state of contraction, and become fixed in that state, producing a return of stricture. But this return may be prevented by passing a bougie occasionally.

After these general observations, in the following chapters are successively considered,

Affections of the urethra which have been mistaken for strictures, and treated as such.—Various substances taken into the stomach, such as ginger, burgundy, beer, have occasioned irritation in the urethra, and induced symptoms resembling those arising from stricture. Piles also, the inflammatory stage of gonorrhœa, and inflammation of the internal membrane of the bladder, have had a similar effect.

Strictures which require an unusual number of applications of the armed bougie for their removal.—To this class, in general, belong strictures of old standing, whose texture has become firm and ligamentous, and which are complicated with a second, or third consequent stricture. In such cases, it is remarkable that the sensibility of the original stricture is transferred to the second; so that the symptoms are relieved by the destruction of the last formed stricture by the caustic, and again brought on by the bougie passing through it. The cure is often very tedious and difficult, requiring many and repeated applications of the caustic. In one case, the patient submitted to four hundred and eighty-nine applications, at different times, during so long a period as six years, before a cure was obtained.

The effects of long continuance of stricture in the urethra upon the bladder.—Neglecting the more common symptoms of irritation, Mr Home here confines his observations to the changes of structure of the bladder from long continued strictures. The first is, a diseased state of the internal membrane of the bladder, most frequently met with in aged persons: the coats are much thickened, and the internal one acquires a spongy texture. Examples are given of this state of the bladder; and, amongst others, that of a General Officer, whose journal, written by himself, occupies one hundred pages of the work. The case, however, is highly interesting. 'It is one,' Mr Home observes, 'which Darau, and every surgeon of eminence since his time, had taken charge of without success. It is one in which Mr Hunter tried the caustic without

without performing a cure.' By the skill and perseverance of Mr Home, aided by the uncommon fortitude and confidence of the patient, the strictures were at length subdued, and the sufferings of the patient greatly relieved. The symptoms, however, of irritable and diseased bladder never went off, and at length terminated the existence of the unfortunate sufferer. The prostate was enlarged, and suppurated; the abscesses had opened into the bladder, whose internal membrane was inflamed, and encrusted with coagulable lymph. As more rare occurrences, cases are given, in the following sections, of ulceration of the internal membrane of the bladder, attended with hæmorrhage; of openings formed between the bladder and rectum; and of rupture of the bladder, or, more properly, of its communication with the cavity of the abdomen, in consequence of the progress of ulceration.

Though the most common cause of stricture is gonorrhœa, yet obstructions in the urethra demanding nearly the same mode of treatment, may be produced by other causes. Examples had been given in the first volume. And in the present, we have cases detailed in the 5th, 6th and 7th chapters, of *strictures brought on by gonorrhœa, by accidental violence on the perineum, and of those produced by inflammation in the lacuna of the anterior part of the urethra.* This last stricture differs essentially from those hitherto treated of. It is not properly a contraction of the internal membrane, but a thickening of the coats of the urethra from inflammation in the duct of the lacuna. Its seat is generally about three or four inches from the external orifice, and is characterised by a hard lump, about the size of half a pea, distinctly felt through the integuments on the lower surface of the urethra.

This effect of local inflammation may arise from different causes; but in all the instances observed by Mr Home, the complaint has been traced to the use of some irritating injection. In this species of stricture, all the coats of the urethra and cellular membrane are thickened. Little good can be effected by the common bougie; and particular caution is required in using the caustic, which, if too large, may produce a slough, extending into the surrounding parts, or an abscess in the lacuna breaking into the urethra.

Strictures producing other diseases.—Mr Home has met with two cases of violent *erysipelas of the head and face*, arising from the application of the common, and of the armed bougie, to strictures in the urethra.

Instances are also given of sciatica, in consequence of stricture; of strictures producing an involuntary passing of the urine;

of enlargement of the testicle subsiding when the stricture was removed; and of a diseased state of the surface of the tongue, which disappeared upon the removal of the stricture.

Strictures in the urethra may be complicated with other diseases of the urinary system, occasioning symptoms of irritation in the bladder, which will continue after the removal of the strictures; as when a stricture in the urethra is accompanied with a stone in the kidney. A case of this kind is related in the ninth chapter.

In some constitutions, from the disposition to violent paroxysms of fever, the caustic cannot be continued a sufficient length of time for the removal of the strictures. But cases, Mr Home informs us, have come under his observation, in which the partial use of the caustic has enabled the patients to pursue the use of the common bougie in a way which, before the caustic had been applied, was entirely out of their power.

By a rash and unskilful application of the caustic, false passages have been formed; the armed bougie therefore should never be trusted in the hands of those ignorant of the anatomical structure of the parts, nor committed to the guidance of the patient himself. To avoid so unfortunate an occurrence, requires, especially in strictures of old standing, the utmost care and attention. In such cases, Mr Home observes that the armed bougie acts more powerfully upon the under part than the upper, in consequence of the dissolved caustic resting there; and in this way, for want of attention to what is going on, a breach may be made through the urethra, and a new passage formed below the natural one. The best guide is the unarmed soft bougie, the end of which, being pressed upon the strictured part, will, from the impression made upon it, give accurate information of the progress of the cure. 'If the end is smooth upon its lower surface, and there is a transverse notch upon the upper, the use of the caustic is to be persevered in; but if the notch or other irregularity is upon the lower surface of the point, and if the end of the bougie is split, one portion passing upwards and the other down; or if the whole of the point is turned a little downwards; it will then be improper to persevere with the caustic, as the bougie is evidently taking a wrong direction. Under such circumstances, a silver catheter, which has a greater than ordinary curve, should be introduced; and in general it may be guided into the bladder, the stricture either having been wholly removed, or sufficiently so, to admit of its being passed.'

In the 12th chapter, are next related, with great minuteness, four cases of suppression of urine from stricture, requiring the operation of puncturing the bladder. In the first case, the bladder

der was punctured above the pubes, in the other three from the rectum. Though successful in all, Mr Home gives the preference to the last operation. We think it necessary however to observe, that our choice must be determined by the circumstances of the case. Where the bladder rises, and can be distinctly felt above the pubes, we should in general prefer making the puncture from that point, as we know it may be done with safety and advantage. And one objection to the operation, viz. the effusion of urine into the cellular membrane and consequent suppurations, may be avoided by allowing the canula of the trocar to remain till the parts are sufficiently consolidated, instead of passing a flexible and smaller one, as is usually done, which allows the urine to escape between it and the wound. If, however, the parts about the neck of the bladder are sound, while the perception of the viscus above the pubes is indistinct, the puncture may be made from the rectum.

The *œsophagus* also is liable to a contraction of its internal membrane, forming a species of stricture similar to those of the urethra, which may be relieved by the bougie and by the caustic.

This species of stricture is generally situated in that portion of the *œsophagus* which lies immediately behind the cricoid cartilage of the larynx; it consists of a transverse fold of the internal coat, which, projecting like a valve, obstructs the canal in different degrees. An engraving is annexed, which conveys a very accurate idea of the nature of this stricture. The disease, suspected from the symptoms, can only be accurately ascertained by passing a bougie, which may retain an impression of the stricture. 'If the end of the bougie retains its natural form, or nearly so, and there is an indentation like the mark of a chord on its side, whether all round or only partially, he may decide that the disease is a stricture; but if, on the other hand, the bougie passes without any difficulty to the distance of $7\frac{1}{4}$ inches, and, when brought back, the point has an irregular jagged surface, it is equally clear that the disease is an ulcer on the posterior surface of the *œsophagus*.'

Of this disease six cases are related; one was relieved by the common bougie, three by the use of the caustic, and two terminated fatally. A case is added, of stricture in the rectum, to which the caustic was applied with advantage.

IV.

Surgical Observations, containing a Classification of Tumours, with Cases to illustrate the History of each Species; an Account of Diseases which strikingly resemble the Venereal Disease; and various other Cases illustrative of different Surgical Subjects. By John Abernethy, F.R.S. &c. London, 1804. 8vo. pp. 262.

MR ABERNETHY'S connexion with St Bartholomew's Hospital, affords him ample opportunity of extending his observations to many important subjects connected with his profession. His merits as an accurate observer and practical writer, are already well known to the public; nor will the present volume of Surgical Observations derogate any thing from the reputation he has already obtained.

The embarrassment and difficulty which generally attend the treatment of tumours, from the want of diagnostic characters by which the different species may be distinguished and named; imperiously called for some arrangement or classification. This defect Mr Abernethy has attempted to supply. It is, however, much to be regretted, that the external characters of tumours could not have been made the basis of the classification. But these are not sufficiently marked, nor are they always indicative of their anatomical structure and particular nature. And thus, the chief advantage of description and arrangement must, for the present at least, be postponed. But the ground-work being once laid, future observation may enlarge our knowledge, and enable us to trace the connexion between the external characters and internal structure of tumours, so that the former may become signs of the particular nature and tendency of each.

The term *tumour* may have been loosely employed by nosologists; but whether Mr Abernethy's definition, which restricts the surgical signification of tumours to 'such swellings as arise from any new production which made no part of the original composition of the body,' be calculated to convey a more accurate and precise notion, we are very doubtful. If the definitions of former writers have been too vague, this surely is too limited. It excludes (as indeed Mr Abernethy acknowledges) all simple enlargements, and hence many glandular swellings, universally considered as tumours, and demanding the same treatment and operations, as those comprehended in the definition. There are glandular tumours, in which it would be difficult to say what was original, or what the new growth; although indeed, in many cases, 'the disease of the gland seems to produce an entire alteration of structure

ture in the part, the natural organization being removed, and a new formed diseased structure substituted in its place.' Osseous tumours, we may observe, sometimes spring from bone, and fat ones are found imbedded in the adipose membrane. Here, then, are tumours, new productions, but similar to the composition of the part whence they originate. Every tumour may be said perhaps to be a new production; but this may be either the same or different from the original composition of the body. In definitions, it is prudent, nay, it is necessary to keep all opinion or theory out of sight.*

Mr Abernethy's definition may probably be derived from his theory of the formation of tumours. He attributes their formation to the effusion and organization of coagulable lymph. It is possible that this may be the origin of some tumours; and that, in this way, an unorganized concrete may become a living tumour, which derives its nourishment from the surrounding parts, but lives and grows by the peculiar action of its own vessels. But the effusion of coagulable lymph is not a necessary, and perhaps not a common step in this process. Many tumours, especially those beginning in glandular parts, owe their very first formation to a diseased action of the neighbouring vessels; the gland is enlarged, its natural functions are deranged, and new parts are secreted. In every tumour, in every case of diseased structure, much more is to be attributed to vascular action, than to the mere organization of effused lymph. But let us suppose a tumour to have this origin, let us grant the fortuitous effusion of coagulable lymph, let vessels shoot into it, and let it be organized; with this organization of the effused lymph the tumour should be completed, it should admit of no farther growth, of no farther change, unless the vessels assume a new action, extend and secrete, and deposit as they extend. It is much more probable, then, that tumours owe their origin to the same actions by which they are continued and increased, than to the simple organization of effused lymph. Mr Abernethy does indeed acknowledge, that when tumours form and grow, there exists an increased action in the adjacent vessels; and therefore he observes, that our first curative indication will be 'to repress as much as possible this unusual exertion of the vessels.' And these are no means, he continues,

* 'On appelle,' says De La Motte, 'on appelle en Chirurgie Tumeur contre-nature, une eminence au corps, qui interesse ou blesse l'action de quelque partie.' The definition is not unexceptionable; yet, from the circumstance just mentioned, how much better is it, than that given by Sagar—'Tumores a solidis auctis per succum nutritium copiosorem adjectum, &c. in hos conversum!'

tinues, more rational in theory, or more efficacious in practice, than those of taking away the two great causes of animal actions, the blood and heat of the disordered part, by leeches, and ' by the application of folded linen, wetted with sedative lotions.'

If the growth of the tumour be by these means suspended, the next indication will be, to promote the absorption of the new formed substance, by stimulating applications, by frictions, pressure, electricity, rubefacients, &c.

In his classification of tumours, Mr Abernethy supposes that they may form an order in the class of local diseases in a system of nosology.

The order may then be divided into genera; and the first genus, from its obvious character, may be denominated *Sarcoma*, or tumours having a firm fleshy feel.

The species enumerated are, Common, Vascular, or Organized Sarcoma; Adipose Sarcoma; Pancreatic Sarcoma; Cystic Sarcoma; Mastoid or Mammary Sarcoma; Tuberculated Sarcoma; Medullary Sarcoma; Carcinomatous Sarcoma.

1. *Common, Vascular, or Organized Sarcoma.* This is the most simple kind of tumour, and seems to be composed of the gelatinous part of the blood rendered more or less vascular. It is organized throughout, but without any distinguishable peculiarity of structure. When it has attained a considerable size, the superficial veins appear remarkably large.

These tumours have but little sensation. They sometimes, though rarely, suppurate; but grow till the skin ulcerates, and exposes the new formed substance, which sloughs and falls off, and thus the disease is sometimes got rid of; ' but such is the constitutional irritation attending this process, and the disgusting factor and frightful appearance of the part, that the surgeon generally recommends, and the patient submits to its removal at this juncture.'

A case is subjoined, marking the progress of such a tumour of uncommon size, on the inside of the knee, and covering the tibia, where amputation appeared the only means of preserving life. The tumour, however, after the amputation, was found to have no connection with the bone or joint on which it lay.

2. *Adipose Sarcoma.* This species, though generally formed in the midst of cellular and adipose substances, has, like other tumours, according to Mr Abernethy, its origin from coagulable lymph. A pendulous tumour of this kind has been known to grow by a narrow neck from the peritonæum. These tumours are always separated from the contiguous parts, by a thin capsule of common cellular substance. Their adhesion is very slight, the principal

principal connexion being formed by vessels, and these commonly very minute, so that little or no dissection is required for their separation;—no tumours are so easily removed. Sometimes, however, when inflammation has been induced, the capsule becomes thickened, adhesions are formed, and the removal of the tumour is rendered more difficult. The Adipose Sarcoma often attains a very considerable size. A history is given of one weighing between 14 and 15 lib. successfully removed from beneath the fascia of the thigh.

3. *Pancreatic Sarcoma.* So named from its resemblance in colour and texture to the Pancreas. It is made up of irregularly shaped masses, connected by a fibrous substance of a looser texture. It is sometimes formed in the cellular substance, but more frequently in the female breast. A case is mentioned of such a tumour occurring in the lymphatic glands, beneath the lower jaw. The Pancreatic Sarcoma is commonly indolent, and sometimes lessens in bulk by judicious treatment; sometimes, however, especially in the breast, it is more irritable, is accompanied with lancinating pains, produces an inflammatory state of the skin, and swelling of the axillary glands.

4. *Cystic Sarcoma.* This species contains cells or cysts. It sometimes occurs as a distinct tumour; but is more frequently met with in the testis and ovary. The sides of the cysts are very vascular. The disease is correctly represented by Dr Baillie: (Fasc. 8. plate 8. fig. 2.) Such a tumour, consisting entirely of an assemblage of cells filled with a watery coagulable fluid, was removed from the face of a boy by Sir Charles Blicke. In the testis, these cysts sometimes contain a caseous substance, of a yellowish cast, and unctuous appearance.

5. *Mastoid, or Mammary Sarcoma*—Strikingly resembles the mammary gland in colour and texture. It is met with in the midst of adipose tumours, and sometimes as a distinct tumour; sometimes also in glandular parts. In some cases, it is of a malignant nature, degenerating into an untractable sore, and communicating disease to the surrounding parts. Hence, Mr Abernethy has placed this tumour between those which seem to possess no malignity, and those which follow, and which are of a very destructive nature.

6. *Tuberculated Sarcoma.* It consists of an aggregation of small, firm, roundish tumours of different sizes and colours, connected together by a kind of cellular substance. An engraving of tuberculated liver in Dr Baillie's plates expresses well the appearance of this kind of Sarcoma: (Fasc. 5. plate 2.) The instances met with by Mr Abernethy have been chiefly in the lymphatic

lymphatic glands of the neck. The tumours ulcerated, became painful and untractable sores, and destroyed the patient. This disease shews a very malignant nature.

7. *Medullary Sarcoma*. This is the tumour found in the testis, and distinguished by the name of soft cancer. It is however very different from cancer in its nature and progress. It is commonly of a whitish colour, sometimes of a brownish red; is of a pulpy consistence, somewhat resembling the appearance of brain. Not entirely confined to the testis, it sometimes occurs in other parts. An example is given of such a tumour in the front of the thigh. Destructive in its nature, it communicates the disease, and affects the absorbents and lymphatic glands, even those out of the course of absorption, to a very considerable extent.

8. *Carcinomatous Sarcoma*. Without attempting a full or distinct history of Carcinoma, Mr Abernethy here presents us with many valuable observations on this dreadful disease. He describes its history and anatomical structure, and compares it with other resembling diseases. With regard to the anatomical structure of carcinoma, it is very difficult, he remarks, to convey any correct idea by words, or even by drawings. The diseased part is peculiarly hard, and intermixed with firm whitish bands, as represented by Dr Baillie. These bands sometimes extend in all directions, like rays from a centre; sometimes they intersect the tumour irregularly; sometimes they form cells containing a pulpy matter, of various colour and consistence.

Next to the Sarcoma is placed the genus of *Encysted Tumours*. They are allied to the former in appearance, but may in general be distinguished by a regularity of surface and shape, and a pulpiness to the touch. The cysts vary in thickness. Sometimes they adhere to the contiguous parts; at other times, they are so loosely connected, that, when laid bare, the whole tumour starts out. That the interior surface secretes the contents of these cysts, Mr Abernethy thinks is obvious, from the observation that the cyst of a wen which has burst, or been punctured, will repeatedly fill with the same substance which has been evacuated. The cysts, however, are sometimes more irritable, and, when opened, shew little disposition to heal, but shoot out fungus, and occasion much distress, fever, and fatal irritation. Encysted tumours have been named from their contents, atheromatous, melicerus, &c.

Cysts, too, sometimes secrete a substance like nail or horn, which protrudes and hardens. Hairs also grow from their interior surface; a case not unfrequently met with in the ovary. Lastly,

Lastly, particular cysts, resembling those of abscesses, irregular in shape, according to the form of the parts amongst which they are produced, are found containing a kind of serum and hydatids, and sometimes small granular white bodies resembling pearl barley.

Another genus of tumours is the *Ossæous*. They commonly originate from bone. They are found pendulous in the cavities of joints, and occur also, though not often, in other parts. A case is given of a tumour in the ham, composed of coagulable and vascular substance, interspersed with a large quantity of bony matter.

We have thus endeavoured to present our readers with an abstract of Mr Abernethy's classification of tumours. But the original must be consulted for many valuable remarks and instructive cases, which our limits forbid us noticing here.

On Diseases resembling Syphilis.

It were greatly to be wished that, in calling the attention of practitioners to these cases, characters could have been pointed out by which they might be known, and distinguished from the venereal disease. But here, the resemblance is so perfect, that every reader must have pronounced them syphilitic, had he not been informed by Mr Abernethy that they recovered without the use of Mercury.

Chancres of various appearances, followed by bubo, and successively by deeply ulcerated tonsils, copper-coloured blotches, coronæ veneris, and nodes of the bones, are the symptoms of the diseases now submitted to our consideration as resembling syphilis. The only circumstance in which they seem to differ, is their getting well spontaneously; to which perhaps may be added some anomalies in the secondary symptoms, or in the order of their appearance. Such anomalies, however, are occasionally observed also in the venereal disease itself. Even Mr Abernethy, though he appears often to have pronounced on the character of these diseases with the most perfect confidence, and that too in opposition to the equally decided opinion of other medical men, who asserted their syphilitic nature with a confidence proportioned to their professional skill and accuracy of observation, confesses that he has not been able to discover any appropriate character by which the disease may be detected. 'The fictitious disease in appearance so exactly resembles syphilis, that no observation, however acute, seems to be capable of deciding upon its nature.'

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The spontaneous cure, then, is the only criterion by which the fictitious disease can be distinguished from syphilis.

If the diseases, however, so perfectly resemble each other in all other particulars, why consider them as essentially different? Is it then so certain that the venereal disease admits of no cure but from Mercury?

‘I have asked the opinion of several surgeons of eminence and abilities,’ says Mr Abernethy, ‘respecting this question, Whether constitutional symptoms of syphilis do ever spontaneously mend? And no one has decidedly replied in the affirmative, whilst all, without hesitation, agreed that they were generally progressive till checked by the effect of Mercury.’ But the question is already begged, by the avowal, that the only criterion of the fictitious disease is its spontaneous cure; for thus, every case which gets well without Mercury, may be said to be not syphilitic.

To judge by appearances, these diseases do not differ from syphilis. Like it, they arise from, and are propagated by, impure sexual intercourse. Their symptoms and progress are the same, or so similar, that they cannot, it is confessed, be distinguished from it. Many, therefore, will still be disposed to consider these diseases as venereal, though cured spontaneously, or without the use of mercury.

At any rate, till some other criterion be pointed out, no useful practical lesson can be deduced from such anomalies; and the safest rule must still be the old one, to class diseases by their external and obvious characters, where no essential difference can be marked; and, in the present case, to administer mercury till the symptoms yield, or till we are convinced that no good can be derived from its use. Much less danger, we are disposed to think, will result from this conduct, than from the irresolution and delay which the apprehension of two diseases strikingly resembling each other, yet essentially different, must occasion in the mind of a less experienced practitioner than Mr Abernethy.

These remarks, however, we would wish to be understood as applying only to diseases strictly resembling syphilis; for we are assured that there are many primary sores affecting the genitals which are not syphilitic, which may be often characterised and distinguished from the venereal chancre. Such are the ulcerating phagedenic sores, and those which spread by sloughing. Yet, even here, we cannot always pronounce dogmatically. And our confidence in our diagnosis will be much lessened, if Mr Abernethy's observation be justified, ‘that the venereal poison can be conveyed into the constitution, and contaminate it through
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the medium of a sore, the general actions of which are probably not venereal.'

The other surgical observations contained in the present volume, are, Cases and Remarks on injuries of the head; on Aneurism; on the operation of Puncturing the urinary bladder; on the Tic Douloureux; on the removal of loose substances from the knee joint.

In a former publication, Mr Abernethy had endeavoured to direct the attention of practitioners to some cases of injuries of the head, attended with depression, which, however, did not require the application of the trephine, proving that slight pressure on the brain is not productive of those dreadful consequences commonly apprehended. The opinion which Mr Abernethy then entertained of the frequent application of the trephine, has been confirmed by many cases which have since occurred to him.

By these observations, he does not wish to discourage altogether the operation of trephining, which he acknowledges to be often a necessary and successful operation, but simply to state the circumstances of cases of fracture of the cranium with slight depressions, which do well without elevation; and to show, that where it is not necessary, it must be hurtful, by increasing the tendency to inflammation, the chief danger to be apprehended in such cases.

'Had I been, in the former publication, writing expressly on the operation of the trephine, I should have stated it as my opinion,' he adds, 'that no considerable depression of the cranium ought to be suffered to remain; and that every hazard should be encountered, rather than such a degree of pressure should be suffered to remain, as might be productive of future inflammation and disease, or disturb the functions of so important an organ as the brain. The object of my last publication was to show, as far as my opportunities of observation enabled me, what appeared to be the kind of cases in which it would be injurious to apply the trephine, and what cases would do well without the operation.'

The great secondary danger to be apprehended from injuries of the head, is inflammation; and hence bloodletting, and the other antiphlogistic means have been freely employed in almost every case. Of late, indeed, one exception has been made to this rule; and in the case of what has been called concussion of the brain, the stimulating plan has been recommended. Mr Abernethy, however, in his former Essays, had shown by cases, the propriety, and indeed the necessity, of a free use of the lancet,

ter, even in concussion; and he has seen, he now informs us, so many additional cases of the like kind, that he is still more fully convinced of the truth of his former representation, and has been led, in consequence, more and more to wonder that a contrary plan of treatment to that which has been so uniformly successful, could ever have been recommended. As an example of violent inflammation succeeding concussion, and of the extent to which evacuations may be carried in such affections, a case is given, where the patient's life was only preserved by large and repeated bloodletting.

To these observations on injuries of the head, Mr Abernethy has subjoined, as in some measure connected with the physiology of the brain, a remarkable case of lacerated wound of the throat. This man was gored in the neck by a cow. The horn entered by the left side of the cricoid cartilage, penetrated as far as the vertebrae, and, passing upwards on the bodies of those bones, came out behind the angle of the jaw. In this course, it had torn the internal carotid artery, and all the primary branches in front of the external. The hæmorrhagy could only be commanded by passing a ligature round the common trunk of the carotid, which was accordingly done about an inch below its division.

The patient soon recovered from the low state to which the hæmorrhagy had reduced him, appeared perfectly sensible, and as well as could be expected, considering the great quantity of blood which he had lost. His pulse, in the evening, was moderately full and strong, and not very frequent. Next morning, however, the state of the patient was greatly changed; the pulse 130 in the minute, and hard; the skin hot. He had been delirious during the night, and had suffered repeated convulsions, chiefly of the left side of the body. He now lay insensible and inattentive to surrounding objects. A small hollow bougie was passed from the right nostril into the œsophagus, by which half a pint of milk and water, with sixty drops of tincture of opium, were injected. The convulsions were thus quieted, but the right side remained motionless. A blister was applied to the head, and twenty drops of Tinct. opii ordered to be given every third hour. The patient's strength, however, rapidly declined; and at 10 o'clock at night he had a severe convulsion, and immediately after died, having survived the ligature of the carotid about thirty hours.

On inspection after death, the brain was found to have suffered a considerable degree of inflammation; there was an effusion of blood on the surface of its convolutions, and a considerable deposition of gelatinous substance between the tunica arachnoidea and the pia mater; water was also effused in the ventricles.

ventricles. The internal carotid was rent across; neither the trunk of the eighth pair of nerves, nor the great sympathetic, nor those of the tongue, appeared to have suffered injury; and the carotid artery was found to be the only part included in the ligature.

The disorder and death of this patient, Mr Abernethy is of opinion, cannot be attributed to the loss of blood; and as so little injury appeared to have been done to the nervous trunks, neither can the symptoms which supervened be referred to nervous irritation. The patient remained tranquil till inflammation of the brain commenced; and a striking similarity may be remarked between the symptoms which took place in this case, and those which are consequent to concussion of the brain. 'Upon reflection,' Mr Abernethy continues, 'I can form no other opinion of the case than that which first struck me, which is, that though the stopping the supply of blood to the brain did not for several hours produce any apparent derangement in the functions of that organ, yet such a state was gradually occasioned by it, and which was attended, like the effects of concussion of the brain, with inflammation.'

What is chiefly remarkable in the history of this case, is, that the left side was convulsed while the right was nearly paralytic. 'An effusion of blood,' our author observes, 'in the left hemisphere of the brain, would affect the opposite side of the body in the same manner that cutting off the supply of blood to the left side appears in this instance to have done.' And yet we may remark, that notwithstanding the ligature of the left carotid, the circulation, as indeed might have been expected from the very free anastomosis at the basis of the brain by the circle of Willis, appears to have been uniform in both hemispheres; for both were equally affected with inflammation, nor did the vessels of one side seem more turgid and full than those of the other.

Mr Abernethy has a second time performed the operation of tying the external iliac artery, with an account of which we are presented in the volume now before us.

To cut up the abdomen, push aside the peritoneal bag, and tie the external iliac by the side of the psoas muscle, would seem at first sight a formidable and fruitless operation. But the cases published by Mr Abernethy show that this may be done without immediate risk; and the last, especially, affords us reasonable expectation of success in future operations of a like kind; for the patient survived the operation till the twenty-third day, nor did the limb appear to have suffered from defective nutrition. The unhappy termination of the case seems to have been owing

to an extensive collection of blood behind the peritonæum, extending from the diaphragm downwards, and communicating with the aneurismal sac, from which the blood appeared to have burst in the direction of the interval between the internal iliac and psoas muscles. The operation, we may remark, was too long delayed, from a want of confidence in the powers of the collateral arteries to carry on the circulation: hence the patient was allowed to languish in the hospital during two months, and the operation was not undertaken till the aneurismal tumour seemed ready to burst, and therefore under the most hopeless circumstances. The patient's sufferings had become intolerable, and the whole limb was largely œdematous.

The urinary bladder may be punctured from different points; from the perinæum, from the rectum, and from above the pubes. Mr Home has shown the advantages and safety of the operation from the rectum, which appears the most eligible where the bladder is contracted, and does not rise so as to be felt above the pubes. But there are cases also, in which the puncture from the rectum cannot be safely performed, on account of the enlargement of the prostate, and diseased state of the neck of the bladder. And Mr Abernethy farther observes, that, in some cases, the perception of the bladder from the rectum is so indistinct, that he has been deterred from puncturing it there; and in one instance, having made a division in the perinæum, and passed his finger beneath the arch of the pubes, he could obtain no such distinct perception of the bladder as could authorise him to push forward the trocar. He thinks that there is frequently this recession of the bladder from the perinæum, which then ascends proportionally higher into the abdomen. His object therefore, here, is to recommend, in such cases, the puncture of the bladder above the pubes. He has performed it in a great many instances, and has never seen any effusion of urine into the cellular substance, or other bad consequences result from the operation; nor, if rightly performed, are such events likely to happen.

The face is the usual seat of *Tic Douloureux*. In the case given in this volume, however, the disease was in the ring finger of the left hand. The pain recurred at irregular intervals, and extended a considerable way along the nerves of the arm. After the patient had endured this painful affection for eleven years, Mr Abernethy, who was consulted, advised the section of the nerve of the finger originally affected, which was accordingly done opposite to the second

cond joint. The violence of the disease was lessened, but not altogether removed. It has now, however, Mr Abernethy informs us, after nine months, become very trivial, while the natural sense of feeling in the finger, at first destroyed by the section of the nerve, is gradually returning. Thus, though the communication between the originally diseased nerve and the sensorium was interrupted, the general irritable actions which had been excited did not immediately cease, though they gradually subsided. On the other hand, the natural sense of feeling, instantly lost by the removal of a portion of the nerve, was proportionally recovering.

When loose substances are formed in the knee joint, and slip between the condyles of the femur and tibia; they give rise to a train of very distressing symptoms; but, when lodged on either side of the patella, they occasion but little inconvenience. To keep them stationary in this position, a bandage has been recommended, and found useful in many instances; but the bandage is sometimes of no avail, as in the case related by Mr Abernethy, where the bodies floated in a collection of fluid within the joint. They were removed by an operation, and the patient recovered. These bodies are easily brought to the inner side of the joint, and may be fixed by the points of the fingers on the internal condyle of the femur, which, Mr Abernethy observes, presents 'an extensive and nearly plain surface, which terminates in front, and, at its upper part, by an edge which forms a portion of a circle.' — If the points of the fingers be firmly pressed upon this edge, so as to form a kind of line of circumvallation round these bodies, they cannot pass into the joint in this direction, nor can they recede in any other, on account of the tense state of the internal lateral ligament. Here, these substances are near the surface, and may be distinctly felt; and there is nothing to be divided in order to expose them, but the integuments, fascia, and capsule of the joint. Mr Abernethy therefore prefers this situation to all others; and in the case related, they could not, he observes, have been secured in any other.

V.

Nouveau Dictionnaire d'Histoire Naturelle, appliquée aux Arts, principalement à l'Agriculture et à l'Economie rurale et domestique. Par une Société de Naturalistes et d'Agriculteurs. Avec des Figures tirées des trois Regnes de la Nature. xxiv. Tomes. 8vo. A Paris, chez Deterville, 1803 et 1804.

NATURAL history is a science of such immense extent, its objects are so multifarious, its applications so unlimited, and the study of its various branches so independent of each other, that it affords an admirable example of the good effects to be derived in some instances from the division of intellectual labour. For its present advanced state it is almost entirely indebted to those who have confined their whole attention to a small part of so wide a field: while each portion is thus carefully laboured, the whole becomes highly cultivated, and the total produce is increased. But it is not enough that the stock of information be merely augmented; it must be placed within the reach of those who wish to partake of it. For this purpose scientific dictionaries are admirably adapted. They are a species of public market, to which each contributor brings the fruits of his individual labours, and in which variety as well as excellence may be found by those who resort to them for information.

The work before us is of this description. The articles relating to man, quadrupeds, birds and cetaceous animals, are supplied by Sonnini, Virey, and Vieillot; those on the veterinary art and domestic economy, by Parmentier, Hazzard, and Sonnini; those on fishes, reptiles, molluscs and worms, by Bosc; those on insects by Olivier and Latreille; those on botany and its applications to the arts, agriculture, gardening, rural and domestic economy, by Chaptal, Parmentier, Cels, Thouin, Du Tour, and Bosc; and those on mineralogy, geology, meteorology and physics, by Chaptal, Patrin and Libes.

Such is the list of contributors repeatedly exposed in various parts of this work; but it is not complete. In the preface we are told that various articles on vegetable physiology, on the diseases of plants and the means of curing them, and on different parts of gardening, have been drawn up with much ability by Tollard, a savant of distinguished merit. Why then is his name always omitted from the list of authors? Tollard, it appears from the advertisement, is a nursery-man, a florist, a gardener; but surely these professions do not degrade a citizen of France
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so much, that his fellow-labourers in the field of science, although they reckon amongst their number members of the National Institute, and even the Minister of the Interior, should be ashamed of his co-operation. Be this as it may, their associated industry and talents have produced a work replete with information. It is not however to be supposed that equal attention should be paid to all the applications of natural history; and, unfortunately, that in which it seems to be most deficient, is its application to the science of Medicine, although it must be confessed, that on some of the principal articles of the *Materia Medica* the most recent information is introduced. As an example of the manner in which this compilation is made, we shall give an analysis of the article *Ipecacuanha*, written by Du Tour.

After giving the vague information which is to be found in every work on the *Materia Medica*, he extracts entire a very good memoir by DeCandolle on the different species of *Ipecacuanha*, inserted in the *Bulletin des Sciences*, N° 64, in which he informs us, that in South America *Ipecacuanha* merely means vomiting-root, and that the plants which we confound under that name belong to different families; but it is certain, that the *Ipecacuan* most commonly employed is got from the family of the *Rubiaceæ*. Mutis says, that in Peru, it is got from the *Psycotria Emetica*. Brotero has lately published in the *Linnean Transactions*, that in Brazil it is got from a new genus of the *Rubiaceæ* which he calls *Callicocca*, the same which was first denominated by Aublet, *Tapogomea*, and afterwards by Swartz, *Cephaëlis*. This plant is the same with that of which an imperfect figure was given in Woodville's botany, Vol. III. Thus it is probable that the *Ipecacuan* of Peru and Brazil come from different plants, the former being the grey, and the latter the brown variety of the shops. Amongst the violets there are also several emetic species which are also called *Ipecacuan*; the *Viola Parviflora*, *V. Ipecacuanha*, *V. Calceolaria*. Of these the first only is sometimes mixed with the *Ipecacuan* of commerce; the others are, in Europe, only preserved in the cabinets of the curious, under the name of White *Ipecacuan*. The same title is also given to some of the *Apocynææ*, to the *Cynanchum Ipecacuanha*, *C. Tomentosum*, and to the *Asclepias Currafvica*. It is also sometimes given to the *Euphorbia Ipecacuanha*, *Dorstenia Brasiliensis* and *D. Arifolia*. These roots operate in very different doses. The dose of *Cynanchum Ipecacuanha* is 22 grains, of the *Psycotria Emetica* 24, of the *Viola Calceolaria* 60 to 72, and of the *Viola Ipecacuanha* from one to three drachms. These differences shew the necessity of attending more particularly to the different varieties

of Ipecacuan. M. Du Tour adds, that in St Domingo several species of *Ruellia* which produce vomiting, are known by the title of False Ipecacuan; and, after a very short account of its employment as an emetic, he concludes this article by another long extract from the *Bibliothèque Physico-Economique*, in which Daubenton empirically recommends its daily use in small doses as a stomachic, to persons from forty to forty-five years of age.

In the alphabetical arrangement of this dictionary the French names are adopted. This may render the work more popular in France, but it is extremely troublesome to foreigners, very few of whom can be supposed to be acquainted with them; and indeed, it appears to us that it would be better, on every account, to follow the systematic names in all scientific dictionaries. To remedy this defect, however, as much as possible, in the last volume we have a very complete Latin index, with references to the volume and page where the articles are to be found. Besides this, the last volume consists entirely of the explanation of the characters used in the descriptions, illustrated by plates and synoptical tables of the animal, vegetable, and mineral kingdoms. The plates, which are numerous, are very neatly executed, and add to the value of the work.

VI,

Des Végétaux Résineux, tant Indigènes qu'exotiques; ou Description Complète des Arbres, Arbrisseaux, Arbustes et Plantes qui produisent des Résines; avec les Procédés pour les extraire; l'indication détaillée de leurs Propriétés et Usages dans la Médecine, la Pharmacie, l'Art Vétérinaire, la Peinture, les Vernis, la Teinture, la Parfumerie, l'Economie Domestique, et en général dans tous les Arts utiles et agréables; on y joint la Synonymie; les Noms vulgaires en Sept Langues; la Culture, &c.; et un Mémoire de J. Nauche, Médecin, membre de plusieurs Sociétés Savantes, sur la manière dont les Substances Résineuses agissent dans l'Economie animale. Par F. S. Dupleissy, Secrétaire perpétuel de la Société Académique des Sciences de Paris. IV. Tomes. 8vo. A Paris, chez Delalain fils, 1802.

WE should not have noticed this work, if we did not conceive it to be our duty to prevent our readers from being as much disappointed

appointed as we were by its pretensions to excellence. The author is not only proud of the novelty of his undertaking, but seems perfectly satisfied with the manner in which he has executed it. 'L'ouvrage qu'on présente au Public manquoit aux Sciences, aux Arts, au Commerce et à la Littérature : ceux qui s'occupent des uns ou des autres, et qui y cherchent des résultats utiles ou agréables, doivent sans doute le désirer. Il n'existe, dans aucune langue, un Traité complet semblable à celui-ci,' &c. On examination, this work without an equal proves to be a very ordinary compilation, in which every thing that is good is transcribed from others ; many of the best sources of information are overlooked ; and whatever belongs exclusively to our author is poor indeed. His failure does not seem to be owing to want of industry, but to his having undertaken a work for which he is by no means qualified. In his table of synonymes the Linnean or systematic names are looked for in vain, and as *English* names of vegetables we find, A tree compagni, S. Joannis kraut, Setvoal, Mastre of delle, Graven tree savintre, Bopffen, Kamps, Dauce, Negel, Spinade Euphorbian, Sowarts sticliwurg, A vood of Rhodes, Asp bleu popier, A tree to blind, &c. Other languages are not better ; and to this jargon we are told by the author that 'il s'y est prêté d'autant plus volontiers, que son ouvrage étant absolument neuf chez tous les peuples, les lecteurs étrangers ne veront pas avec indifférence une Nomenclature qui leur soit partiellement connue.' Very partially indeed will it be known to them, for we doubt very much that any Englishman would recognise his own language in M. Dupleissy's polyglot catalogue, if he had not very prudently prefixed *Anglais* each time he introduced it.

But the author's principal boast, that it is the most *complete* work on resinous vegetables in any language, is true, at least in one sense ; for we believe that no other work ever swelled the catalogue of resinous vegetables in so frivolous and useless a manner. Because camphor has some properties in common with resin, the trees which yield camphor are included ; and because some essential oils deposite crystals which are supposed to be camphor, all plants and herbs which yield these oils are treated of at full length. In the same way the author might have comprehended the whole *Systema vegetabilium*.

The first part treats of all those vegetables which yield camphor.

The second, of those which furnish resinous juices which are used in the arts as well as in medicine, and whose root or fruits are applied to economical purposes.

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The third, of those which furnish resinous matters used only in medicine.

The fourth, of those which have resinous juices, and are more immediately employed in the arts of dyeing or painting, to which is added an account of the caoutchouc plants.

We do not think it necessary to point out the errors of this outline of the arrangement. In its detail it is equally liable to objection; and the whole work, so far as we have examined it, by no means warrants the opinion entertained of it by its author.

‘ Il est nouveau, et manque absolument à notre littérature et à celle des étrangers. ’

VII.

Memorie della Società Medica di Emulazione di Genova. Tomo I. Primo Quadrimestre. 8vo. Genova 1801.

IT is with considerable pleasure that we proceed to make our readers acquainted with the labours of this Society, not only on account of the intrinsic value which some of the essays may possess, but because they in some degree inform us of the state of medicine in a country with which almost all communication has for some time past been interrupted. We have received the first, third, and fourth Numbers, and shall endeavour to procure the second, and have them transmitted to us in future with as much regularity as possible. The following papers are contained in the first Number, to which is prefixed an address from the President Mongiardini on the utility of Medical Societies, the objects of their institution, and the means of attaining them.

On Darnel; Lolium temulentum Lin. By V. Landau, B. Monjon, & F. Silvano.

During the scarcity occasioned by the blockade of Genoa in 1800, some speculators in grain were atrocious enough to substitute the darnel for wheat. The fatal consequences of this piece of villany gave rise to the paper before us. After describing its botanical characters, our authors give its analysis compared with that of wheat. It contains less gluten and more starch. A family of five individuals having eaten of flour bought in the public market, were all of them soon after seized with dimness of sight, confusion of ideas, prostration of strength, trembling, restlessness,

ness, depression of spirits, and cold rigors, especially in the extremities. These were most severe, attended with a disposition to vomit, and continued longest in the maid-servant, who had eaten the greatest quantity. Other examples of the same kind occurred. Some very inconclusive experiments were made on cats and dogs to ascertain whether these effects were produced by an admixture of darnel flour. It produced restlessness and vomiting; but they could not be made to swallow a sufficient quantity to produce more decided effects. Chickens eat darnel seeds with greediness, and without any bad consequences.

On Vaccination. By Lewis Marchelli, Member of the National Institute.

As one of the first publications in Italy on this interesting subject, this paper is highly creditable to its author.

On a new Instrument for Measuring the Density and Combustibility of Fluids by means of the Refraction of Light. By Joseph Mojon, Member of the National Institute.

This instrument consists of a hollow double convex lens filled with the fluid to be examined, whose refracting power is measured by the distance of the focus.

Observations on some Facts connected with Jaundice, and especially on an Epidemic Jaundice. By Dr William Batt.

After some observations on the causes of Jaundice, tending principally to show that it ought not to be considered as a distinct genus in a system of Nosology, but more frequently and properly as the sign of a symptom, or of an accidental occurrence; thus the Jaundice, which is produced by the obstruction of the coledic duct by a biliary concretion, so far from being a symptom of an idiopathic disease, the cause of the concretion, cannot be considered as a sign of the existence of a concretion, but only as a sign of an accidental occurrence, viz. of its position with regard to the orifice of the duct. For the concretion may exist and lie in the bottom of the gall-bladder without producing Jaundice.

Dr Batt next describes a jaundice which was epidemic in Genoa and its vicinity, in 1792 and 1793. He saw the first patient in the end of September 1792, and the last towards the end of August 1793. He saw, in all, 43 cases, the greatest number of which occurred before the vernal equinox of 1793. The disease, although sometimes sufficiently troublesome, was rarely dangerous. In the city of Genoa, only two died, and one of these not

of the disease, but of the remedy; for, having taken some Ipecacuan as an emetic, it produced, by the efforts of vomiting, a fatal hæmorrhagy. The epidemic did not extend to the east of Genoa, but along the coast to the west, as far as Nice, and it penetrated into Monserrato. In the greater number of cases, fever occurred sooner or later, but never severely. It was generally preceded by rigors, and accompanied with pains resembling rheumatism. Languor, heaviness, and an uneasy feeling frequently oppressed the patient three or four days before there was any appearance of jaundice, fever, or rheumatic pains; and, as well as the latter, they seldom lasted longer than four or five days. The red colour of the cheeks in those who had it naturally, did not seem to be diminished, although the rest of the face was very yellow. The urine tinged the linen of a yellow colour. Recently excreted, it had an orange colour; but it soon became deeper and turbid, with a brick-coloured sediment tinged with green. The stools were commonly scanty, but sometimes frequent, and somewhat copious. In many, the feces were of an argillaceous consistence, and a cineritious sublivid colour, and sometimes did not exhibit the smallest vestige of bile. The patients felt a sensation of fulness, especially in the epigastric region, and the whole abdomen was somewhat turgid; and most of them complained of a painful sensation in the right hypochondrium, but neither intense nor very permanent. Hiccough appeared but seldom, and was not distressing. Almost all of them lost their appetite, and some experienced a degree of weakness of stomach with some nausea; but vomiting was very rare. They all complained more or less of lassitude, weakness and indolence, and were restless, melancholy, and extremely irascible. Some had much thirst, others little. Subacids were most commonly agreeable, as well as fallads. In general, flesh meat was nauseated, but some ate flesh and fish as usual. Some complained of an uneasy sensation of the skin, as if it were varnished over; but this ceased in three or four days, leaving sometimes a considerable itchiness. Others, who had not the former symptom, were distressed with itchiness accompanied with a minute cutaneous eruption, or without it. Most of them remained out of bed during the whole disease, and many went about their affairs as usual. The intensity of the disease generally declined towards the seventh or ninth day, but the jaundiced colour, instead of diminishing so soon, frequently became more intense and deeper, remaining more or less evident to the fortieth or fiftieth day. In some, the disease seemed to abate the fifth or seventh day, and returned with greater violence the next day; but whenever it once ceased there was no relapse. The cure was not difficult, and consisted chiefly in keeping the bowels easy, which was commonly

commonly done by Tartrate of potash. Those in whom the fever was more severe, or who had greater thirst, drank at pleasure the Antiemetic mixture of Riverius diluted, to which a little Mineral Anodyne liquor was sometimes added. Calomel was sometimes given as a purgative, and was the only medicine prescribed.

To the account of this curious epidemic Dr Batt subjoins a case of jaundice, in which a gall-stone was found adhering to the gall-bladder, in such a position that it never could have obstructed the passage of the bile. This fact he supports by another, of an urinary calculus connected with the bladder by small vessels. These observations are concluded by the detail of a case, in which the symptoms of the disease at last assumed a tertian type; and, on dissection, a very small abscess was found in the right lobe of the liver, which was very much swelled, and its colour much deepened with blackish spots.

On the Mechanism of the Luxation of the Lower Jaw. By Thomas Bertamino, Public Professor of Anatomy and Surgery.

Our author, after simply mentioning that M. Petit mistook the mechanism of this dislocation, quotes the explanation of Dr Monro senior, and then expresses his astonishment why such an opinion ever could have been adopted. His argument against it is, that when the mouth is opened, the coronoid process is removed half an inch from the zygoma; and that as, in dislocation, the mouth is stretched still more, the distance must be greater. Therefore, the coronoid process cannot have slipped under the zygoma. But our author forgets that, in dislocation, the condyle is displaced and lodged before the tubercle of the temporal bone; so that the mouth cannot be shut on account of the pressure of the coronoid process on the anterior root of the zygoma. Our author's explanation, which scarcely differs from Petit's, that when the lower jaw is dislocated, the muscles which, in its natural position, shut the mouth, now rather tend to open it, does not at all account for the impossibility of shutting the mouth by external force, until the dislocation be reduced.

Case of Epilepsy terminating fatally, produced by a Muscular Calculus pressing on a branch of the Sciatic nerve. By Benedict Mojon and Marcellus Covercelli.

A man who had always enjoyed an excellent state of health, was, in December 1798, suddenly seized with an acute pain in the posterior part of the left thigh, and afterwards with a degree of torpor, which extended along all the leg. It soon ceased; but
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Some months afterwards, returned, accompanied by convulsions of the left side, which lasted about a quarter of an hour. These attacks became gradually more frequent, and more severe, the convulsions extending over all the body, and leaving the patient in a state of stupor which lasted several hours. His strength was gradually wasted, and at last he died in the hospital in April 1801. On dissecting the muscles of the left thigh, about a third from the bottom of the semi-membranous muscle, a calculus of an irregular figure was found about the size of a nut, with a rough surface, which pressed on a branch of the sciatic nerve. That this was the cause of the epilepsy, the authors think is proved, both by the symptoms, and by the case of epilepsy cured by Short by the extraction of a tubercle which pressed on the tibial nerve; by the fatal case of Cappel, in which the par vagum was compressed by a similar concretion; by De Haen's case, in which gangliform concretions adhered to the phrenic nerves; and by Hildanus's case of epilepsy produced in a girl by a glass globule penetrating into her ear.

Meteorological Observations made in Genoa in 1781. By Joseph and Benedict Mejon.

On the Palsy of the Lower Extremities from diseased Spine. By Peter Bonomi.

By this paper it appears that this disease has not been frequently observed in Italy; and that the observations of Pott regarding it are little known there. Mr Bonomi, however, has seen two cases of it which terminated fatally, and one which he was treating successfully by means of caustics. He gives a very accurate dissection of one of the former, in which the bodies of three of the vertebrae were corroded or destroyed, and their place supplied by a caseous matter; and concludes his paper with a general account of the disease, taken principally from Pott.

PART III.

MEDICAL INTELLIGENCE.

*Authentic Account of the Surgical Academy (Pepiniere) at Berlin.
By D. Görcke, Surgeon-General of the Prussian Army, and Director of the Academy.*

THE late King Frederick William the Second, founded, on the 2d of August 1795, a Surgical Academy, consisting of three Staff-Surgeons, four Surgeons and fifty pupils, and destined it, in the first place, to receive the Surgical Staff of the Field-Hospitals, which had acquired experience in the war with France, and to preserve it to the country; and, in the next place, to provide for the Field-Hospitals, in future, a supply of well educated surgeons. Each pupil at that time received an allowance of seven dollars a month, and had to provide himself with board, and to pay for his education. But, from the circumstance of the pupils not residing together, it was found impossible to look after them sufficiently, or to superintend their education properly.

On the 18th of August, this institution was advantageously extended, a proper residence allotted for its members, and its chief object declared to be the improvement of the Surgical Department of the Army. Henceforward, it had to provide—

1. For the education of new serviceable surgeon's-mates (Company-surgeons).
2. For the farther improvement of the present surgeon's-mates.
3. For the supply of a number of good surgeons to serve as the basis for the establishment of field-hospitals in future.

According to this extended plan, the surgical academy consists of the following members :

A curator.

A director.

An upper staff-surgeon.

Four staff-surgeons.

Nine upper surgeons.

Eighty-one pupils; besides an unlimited and variable number of volunteers and company-surgeons.

The curator, at present Lieutenant-General Van Geusau, is only consulted on particular occasions, when his interference is necessary.

The director of the institution is commonly the surgeon-general of the army (at present M. Görcke). He conducts the whole, he appoints the surgeons, admits the pupils and volunteers, and sends them to the army as company-surgeons.

The upper staff-surgeon is sub-director. He ranks immediately under the director. He has to carry into effect the plans adopted by his superior, and to divide the duty enjoined by them properly among the other members of the institution. In the absence of the director (for example, with the army in the field), he supplies his place.

The staff-surgeons are next in rank. One of them is always appointed to attend the sick in the Charité, and has the particular superintendence of such pupils as are in that hospital. Of the other three staff-surgeons, one has the superintendence of each department of the institution. They assist in the scientific improvement, and direct the education of the pupils.

The upper surgeons are under the staff-surgeons. They are also to be considered as governors of the pupils. To them the immediate superintendence of their education is intrusted. They must accompany them to hear the lectures of the professors; go over with them the instructions they receive in medicine and surgery; accurately observe the industry and economical management of their particular pupils; enforce cleanliness and good order; and must not entirely lose sight of them even during their hours of relaxation.

As upper surgeons, the director chooses such as are remarkable for the goodness of their morals, are well grounded in the sciences taught in the schools, possess the necessary knowledge of medicine and surgery, and are fitted for the difficult task of a teacher. In general, they have been formerly pupils in the institution, and are already acquainted with its organization. They rise, according to their seniority, to be staff-surgeons, and afterwards to be upper staff-surgeons. After this, they are promoted, according to a rotation established with the Royal pensioned surgeons, to the situation of regimental surgeon. Before a new appointed upper staff-surgeon can be called upon as a regimental surgeon, at least twelve or fourteen years will elapse; so that the education of the pupils cannot suffer through the change of the superintendant. Before the upper surgeons can be appointed staff-surgeons, they must subject themselves to the usual

usual examinations before the Royal College of Physicians and Surgeons.

The pupils of this institution, whose number is at present limited to eighty-one, are chosen by the director. They must be natives of the Prussian dominions, possess sufficient abilities, have received a good preliminary school education, bring testimonials of their good behaviour, enjoy good health, and have a stout well formed body. They are destined, in the first place, to serve as surgeons to companies of infantry, or squadrons of cavalry; and, in the event of war, those who are farthest advanced are appointed to the field-hospitals. Afterwards, they are promoted according to their several qualifications, either to be upper surgeons in the institution, or to be surgeons in the Guards, and afterwards to be regimental surgeons. Others become battalion-surgeons, or are appointed district-surgeons, or choose for themselves some civil establishment. But, before they are received into the academy, they must all engage, in return for the advantages they may receive from it, to serve at least eight years as company or squadron-surgeons in the Prussian army. Every half year, on the 1st May and 1st of November, nine pupils are sent to the army, as company or squadron-surgeons; so that each of them remains four years and a half in the academy. During this time, they receive an allowance of six dollars a month, with free lodging and fire-wood, and also *gratis* instruction in the languages, the accessory branches of education, and in every thing connected with the sciences of Medicine and Surgery. These studies are prosecuted in proper order, according to a fixed plan, which obliges them to attend each course of lectures twice, and some of them oftener if necessary.

They receive instruction in the languages and accessory branches of education, from masters appointed by the director, and paid out of the funds of the academy. The languages taught are the German, French, Latin, and Polish, and the accessory branches consist of pure and practical mathematics, logic, moral philosophy, history, and geography; in all of which they undergo examinations twice a week by the teachers.

They receive instruction in the theoretical department of Medicine and Surgery, from the professors of the Medical and Surgical College, who receive a salary, granted by the King, out of the funds of the academy. This instruction consists of all those branches of knowledge which are requisite for the formation of a Physician and Surgeon, viz. Anatomy, Physics, Chemistry, Botany, Special Therapeutics, Midwifery, Operative Surgery, Clinical and Juridical Medicine. The proper method of prosecuting these studies is pointed out, and the industry of the pupils

pils secured by the superintendence of the staff and upper surgeons. They are attended in each class by an upper surgeon, who takes care that good order is preserved, and who repeats to them at home the instructions they received in the lecture. Besides this, during some hours set apart every week for the purpose, they are exercised in writing and discoursing on objects of Medicine and Surgery, alternately in the German, Latin, French and Polish languages.

They receive their practical information at the beds of the sick in the Charité, from the professor of Clinical Medicine.

After they have been educated in this manner four years, for half a year before they leave the academy, they must perform the duty of hospital-surgeons in the Charité, where they change the wards with each other, so that they have the care of all kinds of diseases under the superintendence of the surgeon of the hospital. They are allowed the necessary books and textbooks for their studies from the library of the academy; but those who are at all able to do it, must also purchase them for their own use. They must also buy those instruments which they carry away with them; but those which they use in dissection are furnished by the academy.

For the better maintenance of order, the pupils dine together at one table, for which a reasonable stoppage is made out of their monthly allowance. The remainder is put under the administration of the staff and upper-surgeons, who entrust it more or less freely to each of the pupils, according to their disposition to extravagance or parsimony, in order to accustom them early to that economical management, which in future, they will find so necessary with the small allowance they have to expect.

All the pupils, and also the volunteers, wear a military uniform, which they must provide, as well as the rest of their clothes.

The same capability and other requisites of the royal pupils must be possessed by the volunteers admitted. In this capacity only can any foreigners, and not many of them, be permitted to partake of the advantages of the institution. The volunteers, in regard to their studies, and their subjection to superintendence, are upon exactly the same footing with the other pupils. But they must not only provide for their subsistence, and see the medical and surgical professors whose lectures they attend, but also must pay every month to the Academy a small sum as a premium for their education. On the contrary, when their term is out, they do not lie under the same obligations with the Royal pupils, but may dispose of themselves as they think proper; and, if they wish it, they may be appointed to the Army, when

when they will enjoy the same advantages with the other pupils.

Company-surgeons, who formerly used to come to Berlin to improve themselves in medical and surgical knowledge, and were entirely left to themselves, without any advice or superintendence, are now attached to the Academy, in which they receive free lodging and fire, enjoy gratis instruction in the languages and accessory sciences, and may be present at the repetition of the lectures by the upper surgeons. But they must see the professors out of their own pockets, in which they are sometimes assisted by their regiments. While they continue attached to the Institution, they receive their support from the regiment. They must remain at least a year in the Academy, and a longer stay is readily granted to them.

In order to superintend and conduct properly this whole assemblage of pupils, they must all live together in the building appointed for that purpose by the King, under the immediate inspection of the directors and governors placed over them. With the same view they are divided into four divisions, over each of which a staff-surgeon presides.

The first division consists of the attached company-surgeons. The staff-surgeon of this division is assisted by an upper surgeon.

To the second division belong the nine pupils in the Charité, with the volunteers there, under the inspection of a staff-surgeon.

The third and fourth divisions contain the rest of the pupils and volunteers. Each of these is again divided into four sections, and over each section an upper surgeon is appointed.

The institution has a library, from which the pupils are allowed books, a small collection of anatomical preparations for the demonstrations given in it, and a collection of medicines and medical plants for the repetition of the lectures on *Materia Medica* and Botany. For the purchase of books, and improving the other collections, an yearly sum is allotted out of the funds of the Institution, and some time must elapse before they can be very considerable.

A treasurer is appointed to the chest of the Institution. He must always be a man accustomed to the routine of business, and at the same time, in the quality of assessor, must conduct the extensive correspondence of the Institution, in which he will be assisted by an upper surgeon and two pupils. By which means, the pupils in rotation will be instructed in conducting business.

This very valuable paper we have translated from the Surgical Journal published by Professor Loder of Jena. He has subjoined to it an Appendix, confirming the utility of the plan from his

personal examination of the pupils, and containing some remarks on surgical education, which are only applicable to Germany.

We have translated literally the German denomination for the different ranks of the medical officers, choosing rather to make use of exotic phrases, than to run any risk of false statement. As far as we are acquainted with the organization of the Prussian army, their companies and squadrons are much more numerous than ours. To each of these a surgical attendant is attached, corresponding nearly to our surgeons' mates. Their battalions also consist of more companies than ours, and the Battalion-Surgeon is equivalent to our regimental-surgeon, while the Prussian regimental-surgeon is an officer of great authority, as the regiment is equal in numbers to a British brigade, and he seems to rank above all the hospital staff.

It may be also necessary to explain what is meant by district-surgeon. Prussia, and indeed most of the states of Germany, are divided into districts, over each of which a medical superintendent, commonly a physician, is appointed. He receives a salary from government, and is under the controul of the Medical College or Faculty. His duties are, to give advice and counsel regarding every thing which may promote or injure the general state of health; to point out hurtful abuses; to examine surgeons, apothecaries and midwives, respecting their qualifications to practise; to see that they perform their duty; to get them punished for gross misdemeanours; to conduct the medical examinations and dissections in all cases likely to be investigated in courts of law; to draw up reports of the results of these in an impartial and scientific manner; to attend the sick poor within his district; to give immediate assistance in cases of accidents or sudden illness; to direct the means employed for restoring suspended animation; and to report from time to time to the College or Faculty of Medicine every circumstance which is connected with the state of medicine within his district, or bears immediate relation to the duties of his office.

In presenting to our readers this account of an institution, which has had the best effects on the state of Military Surgery in Prussia, we trust that it will not be confounded with those plans for the reformation of the medical department of our army, which owe their origin to disappointed ambition, or to self-conceit courting notoriety. As the system followed by a nation which considers every thing connected with its army as an object of the greatest importance, and whose arrangements in the other departments of military service have been generally approved, it is entitled to the most serious attention. We do
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not, however, pretend to assert that such an institution would be advisable, or even practicable in this country. The situation of the medical officers in Prussia and in Britain, is so dissimilar, that many modifications at least would be necessary. Considering it, however, as a matter of speculation, it does not seem liable to any very weighty objection. It might be placed in London, Edinburgh, or Dublin, or any other medical school of celebrity. Its superintendants might be chosen from among those medical officers who have most distinguished themselves in actual service in Egypt, Holland, or the Indies. The additional expence to the nation need not be very great. At all events, it would be trifling, in proportion to the immense benefits which might result from an institution of this nature properly organized, and would consist principally in bestowing permanent full pay on men who have deserved it by the services they have rendered to their country.



An Account of the Institution for the Cure and Prevention of Contagious Fever in the Metropolis. By Thomas Bateman, M. D. F. L. S. Physician to the Institution, and to the Public Dispensary, Carey-Street.

THE public is already in possession of very ample evidence of the advantages which result from institutions of this nature in large and crowded towns. The experience of the distinguished physicians of Chester, Manchester, and Liverpool, confirmed by the subsequent establishments at Cork, Dublin, &c. has placed the matter beyond the possibility of a doubt. The principal fact ascertained, or rather decided by these institutions, viz. *the facility and certainty by which the propagation of contagion may be prevented, by the simple means of ventilation and cleanliness*, cannot perhaps be corroborated by too great a variety of testimony, nor repeated too often, until it shall be familiar, not only to the most unlearned of the profession, but well known by the community at large. For the general knowledge of this fact would contribute materially to aid the utility of medicine, which the ignorance and prejudices of the public on these subjects too often oppose and counteract. It would tend to disarm contagion of its malignancy, which may be almost said to be adventitious, since it originates in the concentration and confinement of the effluvia. And, above all, during the prevalence of epidemics, it would lead to the most effectual means of arresting their progress, and

of rendering comparatively mild and harmless those diseases which ignorance converts into a scourge.

The extent of the prejudices of the public, arising from exaggerated notions of the power and malignancy of contagion, has been evident in the active opposition that has been made in most instances to the establishment of fever-wards; and the extent of the error in maintaining these notions, has been equally demonstrated wherever the completion of the establishment has been effected; for the facts which Dr Haygarth long ago promulgated, have been corroborated by every subsequent experiment. Even in those apartments where contagion is concentrated, it has been shewn, that the infectious air may be breathed for a short time with impunity; the deleterious *dose*, as in the case of other poisons, varying in different habits and different states of the constitution. But it has been farther proved, that in well-ventilated rooms the contagion is rendered inert, by dilution with fresh air, its influence being limited to the distance of less than a yard from the body of the patient, and nearly annihilated even in this immediate vicinity; that communication of the contagion may, therefore, be always avoided; and especially that it never takes place, through the medium of the air, to neighbouring or adjoining houses, and was never known to be effected by means of the clothes, &c. of visitors.

The writings of Dr Haygarth, Dr Ferriar, Dr Currie, and Dr Clarke, and the reports of several of the provincial Institutions, contain full and satisfactory evidence of the truth of these facts; and the establishment, of which I shall give a brief account, will contribute, to the utmost extent of the experience which it has afforded, to corroborate that evidence.

In the winter of 1800-1801, contagious fever being very prevalent in London, the first attempt to form an establishment for its suppression was then made by the Society for Bettering the Condition of the Poor, aided by the exertions of Dr Murray. A private dwelling-house, not insulated, but in the midst of a row in Gray's Inn Lane road, was fitted up as an hospital, and, in February 1802, opened for the reception of patients in fever, under the superintendence of that intelligent and benevolent physician. It consists of eight rooms; the two on the ground-floor being set apart for the matron and the apothecary's laboratory; and the six, which constitute the three upper stories, containing each three beds, adapted for the use of the patients. This small house, including accommodations for only eighteen patients, was of course not intended to complete the scheme of the Institution. As the funds of the Charity increased, other houses were to be opened in other districts of the metropolis; but, during the last two years,
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in consequence of the great and unusual diminution of the prevalence of typhus, the public attention and the exertions of individuals have been little excited, and an extension of the plan has scarcely been required; for the house has been capable of accommodating three times the number of patients that have lately come under its notice; and the majority of the small number it has received has been brought from distant quarters of the town, from Moorfields, Spitalfields, Tower Street, and even from the Borough.

The principal objects of an institution of this kind are, it is obvious, an early removal of the patients to the House of Recovery, not delayed by formalities of recommendation, or distant periods of admission, and a careful purification of the clothes, furniture and apartments, which may have been previously infected. The following are some of the regulations of the Institution for the accomplishment of these views.

‘ All poor persons labouring under infectious fever, and residing within limits hereafter to be assigned, shall be considered as proper objects of this Charity.

‘ Upon the recommendation of any one for relief by this Charity, notice shall be given to the physician, and the patient may be admitted into the house by an order for that purpose signed by the physician.

‘ A chair provided with a moveable lining, or some other means of conveyance, shall be kept at the house, in which all persons ordered by the physician to be removed, shall be carried thither at the expence of the Institution.

‘ When the fever shall have ceased in a dwelling-house, measures shall be adopted for the purpose of checking the progress of contagion, or preventing the renewal of its effects. The apartments shall be cleansed and white-washed, and infected bed-clothes and apparel shall be purified or destroyed.

‘ A stock of bed-clothes and apparel shall be provided, to consist of such articles as the committee may direct, from which the objects of this Charity shall be supplied when it may be necessary.’

Two Directors are appointed monthly by the Committee, and a permanent Inspector, under their direction, to superintend the proper application of the clothes, &c. and the purification of infected apartments.

The internal regulations of the House are nearly the same as those recommended by Dr Haygarth and Dr Ferriar in their respective institutions. They chiefly direct the change of the infectious clothes and linen of every patient on admission for clean linen, and the washing of the face, neck and extremities, in lukewarm water.

The effect which this salutary change has upon the patient, before any medicine is given, is often more beneficial than those which all the febrifuge drugs in the world could bestow. The floors of the wards are also directed to be washed at least twice a week, and the walls to be white-washed at least every three months; all discharges to be speedily removed; and the clothes which the patients bring with them to be carefully purified, and restored to them on their dismissal, free from any remains of contagion. They rejoin their families, therefore, without the hazard of communicating infection.

The beneficial effects of the Institution, especially in the district visited from the Carey-Street Dispensary, have been extremely apparent. In several courts and alleys, where, previous to its establishment, contagion was perpetually lurking, and where, in consequence, the same individuals were frequently attacked with fever again and again, the disease has altogether ceased to appear since the purification effected by the Institution. Within this district, only fifteen cases of typhus have come under our notice during the last eight months.

In many families, too, the efficacy of the measures adopted by the Institution has been most obvious. Although several persons have been attacked, and often fatally, previous to any application for relief; in every instance, from the time of the employment of these measures, the progress of the contagion has been stopped. To this fact I have not heard of a single exception.

It has been stated that the house is situated in a row; and the inhabitants of the adjoining houses, under the influence of common prejudices, were at first, as might be expected, very adverse to the Institution. But after an experience of nearly two years, residing in actual contact with the House of Recovery with perfect impunity, their alarm has altogether ceased; no fever having, during the whole time, occurred in the neighbourhood, or been known to be communicated in any way from the House.

Since the opening of the House on the 9th of February 1802, 389 patients have been admitted. Of these, 349 have been discharged cured, 35 have died, and 5 are at present in the House, (November 26th, 1804.) Only 26, however, can be said to have died of fever. One died suddenly during convalescence; another in consequence of the recurrence of an old *tympanites*, some time after the disappearance of fever; a third of an organic affection of the heart, as appeared on dissection, &c. The proportion of deaths would probably be considerably less, could the patients be received in the early periods of the disease. It may be remarked, that of 50 patients admitted in the course of the present summer, only one applied to the Charity before the fifth day of the fever, and

and above one-third after the ninth day. In no instance has the fever proved fatal, where the patient was admitted before the sixth day of the disease.

I have little to add with respect to the practice which has been employed in the House, as no peculiar remedies have been resorted to. The external use of cold water has been liberally employed both by my predecessor, Dr Dimsdale, and myself, in all cases where, according to the accurate and philosophical conclusions of Dr Currie, it appeared requisite or admissible. The result of Dr Dimsdale's practice has already appeared in the second volume of Dr Currie's '*Reports*,' (third edition); and it coincides perfectly with the copious evidence which that enlightened physician has adduced. But, after a view of the abundant experience upon which the recommendation of this great and invaluable remedy in fever now rests, it would appear presumptuous to attempt to give any bias to the evidence, from the partial experience which this House has afforded. I have had an opportunity, in one case only, of employing the cold affusion before the third day; and therefore the remedy, with that exception, has been applied too late to *cut short* the fever. It has invariably, however, appeared to give relief to some of the uneasy sensations which accompany fever, and which constitute a great additional irritation; it has almost invariably been succeeded by a calm and refreshing sleep, and generally by a gentle perspiration; * the course of the fever has also, in general, seemed to be milder, than from the violence of the first symptoms might have been expected. The practice has appeared to be attended with the least advantage, in those cases where there was great cuticular constriction (if I may be allowed the use of that expression), shewn by a dry and parched skin, without any tendency to perspiration, and accompanied with an uneasy sensation of heat, but where in reality the thermometer indicated scarcely any increase above the healthy temperature, not rising above $98\frac{1}{2}$ or 99° . In a few cases of this kind, I have employed the cold bath twice a day for several days, with a temporary but very transient benefit. Where the temperature of the body was high, and the skin yielded a pungent sensation of heat to the hand, the application of cold water was, with one exception, invariably followed by a diminution of the febrile heat by one, two, or three degrees of the thermometer, by a diminution of the velocity of the pulse, and other not less salutary changes, which,

* It should be observed, that the mode of using the cold affusion in the House is by means of a *shower-bath*, which is more commodious, less alarming to the patient, and perhaps equally efficacious with the affusion by means of a bucket.

which, though not effectual in removing the fever, contributed certainly to the relief, and probably to the safety of the patient.

In some cases, where there existed particular urgent symptoms, or determinations to particular organs, I was at first in doubt as to the propriety of employing the cold bath, although indicated by the steady increase of heat. In all these cases, however, I ventured on the use of it, from a conviction of the importance of alleviating the great general irritation which accompanies that state of temperature, and of the inefficiency of all other remedies to produce that relief in an equal degree. The result was favourable. In no case were these determinations to the lungs, head, throat, or bowels, increased by the cold bath. Various catarrhal symptoms, a severe cynanche tonsillaris, profuse discharge of the catamenia, and even a severe diarrhæa, with great hæmorrhagy from the intestines, were not increased by its use. On the contrary, all the former cases appeared to be relieved by it; and in the last instance alone, which is the exception above alluded to, the symptoms were not alleviated, nor was the febrile heat diminished, nor any other advantage procured by it. This conclusion, however, may be deduced,—that, where the heat is steadily above the natural temperature, even in a very slight degree, without perspiration or a sense of chilliness, the practice is safe, even with the existence of the most untoward symptoms. From this limited experience, we should scarcely have been warranted in these general inferences. But, after these facts had come under my own observation, I was gratified to find, by the second volume of Dr Currie's Reports, that they accorded precisely with his enlarged knowledge of the subject.

It is earnestly to be hoped, that this important practice, no longer a matter of experiment, and perhaps the only remedy to which the term *febrifuge* can with strict propriety be applied, will be generally adopted. It should be recommended with confidence, not as a bold expedient, for that implies danger, or at least uncertainty; but as a known remedy, universally safe, and of the operation of which a more rational and philosophical explanation can be given, than of any other remedy perhaps within the sphere of medicine.

Featherstone-Buildings, Nov. 26. 1804.

An Account of the Diseases which have been treated at the Public Dispensary, Carey-Street, from September 1st to November 30th, inclusive.

ACUTE DISEASES.

	No. of Cases.		No. of Cases.
Typhus - - - - -	6	Variola - - - - -	2
Synochus - - - - -	13	Rubeola - - - - -	3
Tertiana - - - - -	2	Rheumatismus Acutus - -	2
Quotidiana - - - - -	1	Cholera - - - - -	8
Scarlatina - - - - -	5	Abortus - - - - -	2
Pneumonia - - - - -	9	Pertussis - - - - -	3
Catarrhus - - - - -	40		

CHRONIC DISEASES.

	No. of Cases.		No. of Cases.
Chronic Hydrocephalus -	1	Hemiplegia - - - - -	4
Cephalea - - - - -	12	Paraplegia - - - - -	2
Hæmoptysis & Phthisis -	36	Epilepsia - - - - -	1
Chronic Catarrh & Dyspnæa	32	Rheumatismus Chronicus	34
Dyspepsia - - - - -	42	Lumbago - - - - -	5
Diarrhæa - - - - -	31	Melancholia - - - - -	2
Dysenteria - - - - -	16	Asthenia - - - - -	30
Colica - - - - -	2	Hydrops - - - - -	12
Colica Pictonum - - - -	6	Impetigo - - - - -	7
Menorrhagia - - - - -	4	Psforiasis - - - - -	3
Amenorrhæa - - - - -	11	Lichen - - - - -	2
Hysteria - - - - -	4	Prurigo - - - - -	3
Leucorrhæa - - - - -	4	Porrigo - - - - -	2
Dysuria - - - - -	6		

During the three months, comprehended by the preceding list, the metropolis has been, on the whole, very free from disease; and the applications to this Dispensary have been fewer than for a considerable time past within the same period. In the month of September, the weather was uniformly hot; and, on several days in the third week, the thermometer in the shade was as high as 77° or 78°, even about sunset. In October and November the temperature was variable, the vicissitudes were great, and there were frequent and heavy rains.

Until the middle of October, the usual complaints of the alimentary canal were prevalent to a considerable degree. The most predominant form was diarrhæa, which yielded in general to anodynes and diluents, and in some cases was relieved by laxatives. In October they more generally assumed the dysenteric type, and, in several instances, were attended with severe hæmorrhagy.

morrhagy; those which had been neglected in the beginning proving extremely difficult of cure. Cholera was much less prevalent than is usual in the hot months.

But the present season, extremely healthy on the whole, has been remarkable for the general absence of contagious fever. For several months not one patient in Typhus applied to the Dispensary; and, in other districts, the disease was equally unknown: (See the different Monthly Reports.) But during the same period of former years this disease was generally very prevalent, as is testified with respect to this district, by the valuable reports of Dr Willan ('On the Diseases in London'), and of Dr Murray (Brit. Mag. 1800). No plausible cause has yet been assigned for the absence or prevalence of epidemic febrile diseases. Meteorological observations have thrown no light upon the subject; and chemistry has not detected any change in the condition of the air, by which it might be explained. Sydenham referred the appearance of epidemics to the operation of effluvia arising from the earth: 'Quippe qui animadverto,' he says, 'annos, quoad manifestam aëris temperiem sibi planè consentientes, dispari admodum morborum agmine infestari, et vice versa.' But until we ascertain some fact, we gain no knowledge by assuming an hypothesis.

Some of the names in the foregoing list are adopted from Sauvages, as being more applicable to a practical discrimination of diseases, than some which might be borrowed from Dr Cullen. The titles of the last diseases in the catalogue, viz. the cutaneous eruptions, are those which Dr Willan has used in his treatise on that subject. Hitherto the writings of medical men, on this extensive class of diseases, have abounded with no small degree of confusion and obscurity; the terms *leprous*, *herpetic*, and *scorbutic*, being used vaguely and indefinitely; and few authors agreeing in a common acceptance of any of them. It is much to be wished, therefore, that a nomenclature, founded not upon an hypothetical classification, but on an arrangement of similar appearances, should be adopted as a standard by all authors, who communicate to the public any information respecting this obscure tribe of diseases.



On the Antivariolous Powers of Vaccination.

The public attention has been lately much engaged with the supposed cases of Small-Pox after Cow-Pock. The occurrence of such cases has long been dreaded by those who were most rationally exerting themselves to derive from vaccination the greatest possible

possible advantage to the state and to mankind. They saw with regret the practice get into the hands of well-meaning persons, who did not possess the necessary knowledge of the disease; and they witnessed, with indignation, the careless manner in which it was practised by some professional men, regardless of their character and of their duty. In proportion as the disease was slight did they relax their attention, and often neglected to see that the disease had actually been produced, trusting to the report of mothers and nurses. The parents of children, who were vaccinated at public institutions, were also very frequently so ungrateful for the benefit conferred upon them, that they took it upon themselves to decide on the success of the vaccination, and did not return at the appointed time to shew its effects. Many, in this way, are erroneously supposed to be secured against the Small-Pox, who in reality never had the Cow-Pock. The occurrence of variola in such cases, although it can have no weight in the opinion of the profession, cannot fail to render vaccination less popular.

But even the uncertainty of the characteristic marks which determine its preventive efficacy, is so great, that the most experienced are unable to decide; and when the doubt is once entertained, the failure of subsequent inoculations cannot completely remove it. How far the test of double vaccination proposed by Mr Bryce can be always confided in, deserves to be accurately investigated; and if it shall be found correct in all cases, it becomes the duty of every practitioner, even in the greatest practice, to employ it, however inconvenient it might be. But the inconvenience which has been urged as an objection is next to nothing, as it consists in reinoculating the patient on the fifth or sixth day, with matter taken from his own arm.

But if experienced vaccinators find it sometimes difficult to pronounce decidedly on the character of the disease, those who commence the practice, without ever having seen it, must be still more liable to err. If, unfortunately, they produce at first a spurious disease, they go on inoculating, without securing any of their patients against the variolous contagion. From this source of error, the greatest number of Mr Goldson's cases of small-pox after vaccination appear to have proceeded; for he himself tells us that Mr Rickman found that the matter ran rapidly into a purulent state after the eighth day (Goldson, p. 49.) No experienced vaccinator would have taken matter from such a source; and Mr Goldson's assertion, that the arm shewed a fine specimen, strongly characteristic of the disease, amounts to nothing. Dr De Carro and his friends also thought that Count Mottet's arm exhibited so fine a specimen, that they preferred matter from it to less recent matter which they had; but they soon discovered that

that the disease it produced had no antivariolous powers (See *Annals of Medicine*, vol. VIII. p. 301.)

According to the report, however, of a very intelligent medical committee, cases have actually occurred of small-pox after perfect vaccination. But as these bear no proportion to the immense number of instances in which vaccination has proved unquestionably preventive of small-pox, they do not militate in the smallest degree against the propriety of the practice, but, on the contrary, by corroborating the analogy between vaccina and small-pox, which also, in some particular constitutions, does not secure the patient from having the disease a second time, it in reality ought to increase our confidence in its antivariolous powers. As the two best authenticated cases in which vaccina did not prevent small-pox, were sisters, it would appear that it depends on some hereditary idiosyncrasy. Would it be possible to ascertain that the same individuals, or other individuals of the same family, were liable to have small-pox oftener than once? If the preventive power of vaccina or small-pox is not absolute, in what manner is it limited? Does it, according to Mr Goldson's idea, cease after a certain period? Does it modify in any way the symptoms of small-pox, when it is unable to prevent the recurrence of the disease? Does it become absolute after a second or third recurrence? Is there any plausible hypothesis to account for the fact, that some diseases do not attack the same individual oftener than once? Many other interesting questions naturally occur on this subject; and we look forward with expectation to the next report of the Vaccine-pock Institution, which has so laudably undertaken the arduous task of investigating the laws, and to whom the history of this curious disease is so much indebted.

Extract from a Letter from a Correspondent in London.

On Pulmonary Tubercles.

Although it would be easy to prove that not a smaller proportion than one-fifth of the whole deaths in the British islands is occasioned by tubercles and their consequences *vomica*, yet but a small part of their history has been investigated. Besides, these tubercles, as I have uniformly found, being the local disease which occasions or accompanies what are universally considered to be pulmonary consumptions, they are also, in ninety-nine cases out of the hundred, the local disease in the coughs which commonly recur at the beginning of winter for several years before death.

But

But I also find the same state of the lungs in many cases of pulmonary affections which belong to non-descript or unnamed diseases, and which supervene in the convalescent state of continued fevers, and also in dropsy of the chest from various diseases, as well as in different chronical and organic affections. Pulmonary tubercles then do not produce, or are concomitants of, one set of symptoms which are referred to one denomination only, viz. consumption.

These tubercles occur most commonly in the middle periods of life; but no age perhaps is exempted from them. At least I have found them as early as the seventh year, and as late as the seventieth.

The seat of tubercles is undetermined, that is, whether it be in the air cells or in the cellular membrane.

The nature of these hard substances is also unknown; but they certainly are not glandular, although asserted to be so by a most respectable authority (Heberden Commentarii, p. 322.) It seems a reasonable hypothesis, that they are formed from effused coagulable lymph, coagulated by oxygen gas, or from this lymph inspissated by the evaporation or absorption of the thinner parts.

In the cases of pulmonary consumption, the left side of the lungs is perhaps always much more diseased by tubercles than the right; but in other diseases the right is as much diseased as the left. I do not recollect ever seeing one lung only affected. The late Dr Starek's observation is accurate, that the inferior parts of the lungs are always less diseased than the superior.

The circulation is not always accelerated in consumption. I have observed the pulse at 50 only in a minute. Animal food does not always accelerate the pulse. On the contrary, I have observed it to fall from 120 to 90 on dining on cold lamb and salad, or other cold meat, for weeks successively; but in these instances there was a keen appetite for this sort of food. If any considerable action take place during the consumption, such as a violent purging, hæmorrhagy from the kidneys, &c. or a different constitutional disease supervene, such as a typhus fever, the symptoms of the pulmonary consumption are often suspended, and the disorder is apparently cured; but it recurs on the going off of the supervening disorder.

A suspension of all the symptoms of pulmonary consumption has been effected by living in rooms, the temperature of which was, during the winter, 60° to 65°; during which the pulse was reduced from 130 to 80, the cough disappeared, the breathing became free, the spitting ceased, &c. On going into the air the summer following, although in warm weather, the symptoms from time to time returned, and in the winter following, the temperature

perature not being produced as in the preceding winter, the disorder returned, and in three months proved fatal.

The only effectual means of stopping the progress of consumption are pregnancy and a warm atmosphere.

Tubercles seldom prove fatal in pulmonary consumption until many of them become vomicæ; but in other diseases, after death, the lungs are often found full of tubercles without any vomicæ. In one case of Empyema taking place in pulmonary consumption, the pleura costalis and muscles were suppurated on the right side, so that many pints of pus were discharged by a puncture for six months, during which time air issued in great quantities from the aperture. For four months all the symptoms diminished, so as to afford great hopes of a recovery; but at last the breathing became difficult and very short, the pulse grew quick, the nights were sleepless, the strength failed, hectic fever appeared, and the patient died. After death, one of the ribs over which the pus had flowed for six months, was eroded, or was become carious. The right lung was not, as we expected, contracted, but was indurated and full of tubercles, and the cellular membrane was extensively condensed. The cavity of the thorax on the diseased side was not diseased, and the lungs adhered in no part to the pleura costalis. The left lung was in a healthy state.

I see no connexion between scrophula and tubercles, to justify the opinion that consumption belongs to that disease. It does not seem probable that consumptions are infectious in this climate; and it remains to be shewn what is the nature of the disorders called consumptions, which are so infectious in other climates; as in Italy and Greece.

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THE
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MEDICAL AND SURGICAL JOURNAL.

1. APRIL, 1805.

PART I.
ORIGINAL COMMUNICATIONS.

I.

Case of Malconformation of the Urinary and Genital Organs in a Female. By Mr Astley Cooper, Surgeon to Guy's Hospital, London.

ANN CARTER, aged 22, was admitted, on the 4th of March 1803, into St Thomas's hospital under the care of Mr Cline, on account of a fungous tumour on the lower part of the abdomen, through which the urine was involuntarily discharged. This misfortune she had laboured under from her birth; but when she arrived at the age of puberty, her situation, in that part of the country in which she was born, became insupportable to her feelings, on account of her infirmity being known. She therefore resolved to seek her subsistence in London, where she vainly imagined it might escape detection, and she soon procured the situation of a servant to a family in town. But being unable to retain her urine, her clothes were rendered offensive by it, and her bed was nightly wetted. Her infirmity was thus soon discovered by her employers, and she was dismissed from their service. By frequent disappointments of this kind, she was reduced to seek a miserable subsistence by begging, and spent days and nights in the streets of London, until, becoming ill from the effects of want, and exposure to the severity of the weather, she was carried by the police to an hospital; and, when admitted into St Thomas's, she was so much reduced by poverty and sickness, that she died on the 8th of March, four days after her admission.

Upon examination of the fungus, when she was alive, it was found to occupy the region of the pubes, and to extend from thence to the usual situation of the symphysis. It was red in colour, spongy in texture, very vascular in appearance; bled upon the slightest irritation, and was very sensible when touched. It formed three projections; a large one in the middle, with a much smaller one on each side. The urine frequently trickled from the lower part of the tumour; and if any thing was given her to drink, in a few minutes it began to flow *guttatim*; but if she made any considerable effort with the abdominal muscles, a small stream of urine *sprouted* from each side of the surface of the tumour. The openings through which it was discharged were sufficiently large to admit the introduction of a small probe, and were situated one on each side of the tumour, near to its junction with the skin, and towards its lower edge. Just above the tumour a cicatrix was observed, which was the only appearance of umbilicus; so that the umbilical vessels had passed through the parietes of the abdomen near the fungus, instead of at the usual place.

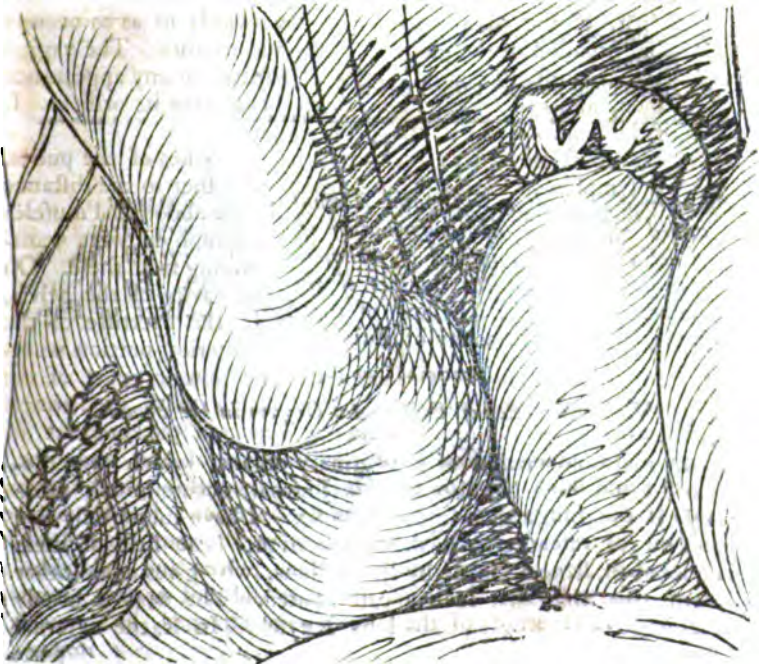
When examined after death, the external labia pudendi were found to recede from each other more than usual, and discovered the total want of the nymphæ and meatus urinarius, as the lower part of the fungus extended downwards so as to occupy the usual situation of the glans clitoridis and meatus. The vagina maintained its usual situation, but was destitute of any appearance of hymen, and had no extension of perinæum over its orifice. It was of the common size of the virgin vagina.

Upon dissection, it was discovered that the bones of the pubes, at their symphysis, were separated from each other to the distance of an inch and a half, or two inches, and that the abdominal muscles immediately above the usual situation of the symphysis were wanting; so that the bladder was devoid of any covering from these. On opening the abdomen, and looking into the cavity of the pelvis, the urinary bladder was seen forced through the aperture of the skin and abdominal muscles, but with its anterior portion wanting; so that the fungous surface upon the anterior part of the abdomen was the posterior part of the bladder with the ureters terminating in it. From within, it appeared puckered at its edges, and adhered firmly to the margin of the abdominal muscles and skin. The ureters which opened through the lower part of the fungus were uncommonly large, and had served the purpose of reservoirs. The kidneys were also more than double their usual size, owing entirely to their pelves and infundibula being enlarged; for the secreting part did not appear altered. The corpora cavernosa of the clitoris were attached, in the usual manner,

manner, to the bones of the pelvis. Their muscles, though small, were distinctly formed, as were also the *plexus retiformes*. The corpora cavernosa did not pass on either side in a straight line towards the glans, but in a semicircular direction; and, on tracing them towards the upper part of the vagina, I found them terminating on each side in a glans situated in the middle of the labium, and covered with a portion of skin resembling the prepuce. The glans of one side was about two inches distant from the glans on the other. The uterus and its appendages were unaltered; the other viscera of the abdomen were in a sound state; and the rectum terminated in its usual manner in the anus.

The explanation of these appearances is simple. The lusus consists in a deficiency of the skin and abdominal muscles anterior of the urinary bladder; in the want of the anterior half of the bladder; and in the projection of the posterior part through the opening in the abdominal muscles, where it forms a tumour, upon the surface of which the ureters open.

Sketch of a portion of the Rectum and Right Ureter, of their actual size, to shew the very extraordinary enlargement of the latter, and the immense disproportion between them.



Explanation of the External View. Plate I. page 42.

- a a*, The spines of the ossa ilii.
- b*, Excoriation above the fungus.
- c*, Umbilical cicatrix, shewing where the umbilical vessels passed, above the fungus, and close to it.
- d d*, Projections of the fungus.
- e e*, External orifices of the ureters.
- f*, Vagina.
- g*, Anus.

Explanation of the Appearances on Dissection. Plate II.

- a*, Gall bladder.
- b*, Vena cava.
- c*, Aorta.
- d d*, Spermatic vessels.
- e e*, Kidneys.
- f f*, Ureters.
- g*, Bladder inverted.
- h*, Uterus.
- i i*, Fallopian tubes.
- k k*, Ovaria.
- l l*, Umbilical arteries.
- m*, Umbilicus.
- n*, Umbilical vein.
- o*, Rectum.
- p*, Abdominal muscles turned down.

II.

An attempt towards a Systematic Account of the Appearances connected with that Malconformation of the Urinary Organs, in which the Ureters, instead of terminating in a perfect Bladder, open externally on the Surface of the Abdomen. By Andrew Duncan jun. M. D. Fellow of the Royal College of Physicians, and Royal Society of Edinburgh.

(Concluded from page 60.)

V. *Description of the Genital Organs in the Female.*

THE malconformation of the urinary organs, which was described in the First Number of this Journal, occurs much more rarely in the female than in the male sex. I have found only five cases on record, anterior to this publication. The first of these is quoted from Van Horne by Bartholinus, who gives us no other information, than that such a case existed. The next is briefly described and slightly delineated by Ruysch. In it the external parts

DISSECTION OF MR COOPER'S CASE.
Page 132.



parts of generation seem to have been perfect, and the vagina was furnished with a semicircular hymen. Of the third example, we have no less than three accounts, and as many engravings, by Mr Bonnet, the surgeon who delivered her of a living child; by Dr Oliver, who saw her after delivery; and by Dr Huxham, to whom the case was communicated. The whole account is so extraordinary, and seems to have been so entirely forgotten, that I shall make no apology for transcribing Mr Bonnet's description of it, with the omission of some strictures on Dr Oliver's inaccuracy.

' As there appears to be some difference, in the accounts of Drs Huxham and Oliver, of the remarkable structure of the pudenda, &c. of the woman of Lanteglass, near Fowye, published in the Philosophical Transactions, No. 379, I take the liberty of giving you a particular account of what I observed with respect to this matter. This I am the rather imboldened to do, as I repeatedly observed the wonderful structure of the parts before the birth approached, and before I was obliged to make the incision.

' This woman was about 23 years old when she was married, and some time after conceived. As she was conscious of the preternatural structure of the parts, and her mother apprehensive of the danger that would attend the delivery under such unhappy circumstances, they applied to me about the seventh month, in order to engage my assistance.

' On viewing the abdomen, I made the following observations: There was no sign of the umbilicus; but about three inches lower than that is regularly placed in persons naturally formed, there was a spongy, fleshy extuberance, nearly of the shape and bigness of an hen-egg, entirely resembling that luxuriant flesh which is thrown forth in ill-digested wounds, and is therefore commonly called proud flesh. This was exceeding tender, and on it she could not bear the least touch. On the lower part of this excrescence, I perceived two small orifices, the one distant from the other about an inch. Through these the urine drops continually, nor is she able to retain it, but, by violent efforts, can make it spout out near a foot.

' About $\frac{1}{2}$ inch below this protuberance was a transverse orifice, much resembling the anus of a cock. Through this the menses regularly flowed: by this she was impregnated.* It was with some difficulty I thrust my finger into this orifice, in order to reach the os tincæ, which, however, I could by no

I 3

means

* Per hoc etiam gravida facta fuit mulier, haud magnam vero tempore coitus percepit voluptatem, summa enim penis glans in hoc orificium vix fuit intrmissa, multo minus ipsa virgo. *Huxham.*

means feel, it lay so deep; but I plainly felt a thick transverse membrane separating this passage from an orifice, which is situated about two inches below that already described. This lower orifice seemed to be situated exactly where the symphysis of the ossa pubis is in women regularly formed, somewhat above the place where the natural hiatus should have been. I could but just enter the tip of my finger into this. There were a few hairs scattered up and down irregularly about this orifice. The anus terminated as usual with a sphincter, about two inches below this lower orifice, much more forward than usual.

‘ So that the upper orifice, which may be properly called the orifice of the vagina, was about $\frac{1}{2}$ inch below the umbilical excrescence; the lower oblong orifice (or another passage to the womb) was about two inches below that of the vagina.

‘ This woman had no os, or ossa pubis; indeed, there was an apophysis jutting out from the lower part of each os ilium, but they were far from being joined, as usual, by synchondrosis.

‘ *July 18. 1722.* I was sent for late at night. I found the woman with true travail-pains upon her. The throes were excessive violent, and the continued agony had almost quite exhausted the poor woman’s spirits; but the orifice of the vagina was no way sensibly dilated, though the anus, through the violence of the throes, opened extremely wide. In vain were all endeavours to relieve her, by thrusting up the child, and putting the mother in a proper posture. Vain were her own throes and agonies. Convulsions now had seized her, and nature seemed to have denied a longer life to the mother, or an entrance into it to the child.

‘ I was in the utmost perplexity what to do under these circumstances. On the one hand, I considered, that if there was not a passage made for the child, and that by incision, both mother and child must speedily perish. On the other hand, I foresaw the danger and hazard of an incision, and the unavoidable censure of having killed the woman, if she should die under the operation. At last humanity so far prevailed with me, as to try a doubtful method of preserving life, rather than none.

‘ I told her mother, and the other persons in the room, that death was inevitable, without making the passages wider by incision, and so attempting a delivery; withal apprising them of the uncertainty of the event of the operation. When they saw her, as they thought, just expiring, they delivered her into my hands, to do with her what I thought fit.

‘ I immediately thrust my scalpel into the inferior oblong orifice, and directly cut into the orifice of the vagina, so brought them into one; then, presently, with my scissors, snipped the transverse
membrane.

membrane. This being done, I easily introduced my hand, felt the head of the child, and, with my finger thrust into its mouth, drew forth a female infant, living and well formed, to my own surprise, and admiration of all. Thus was this Gordian knot at last happily cut, that could not be untied.

‘ Ever since she was delivered, in the manner recited, she hath suffered a prolapsus uteri, upon the least standing or walking. I proposed to remedy this by a suture, as is practised in the case of the vulva breaking into the anus; but she would by no means admit of it; so that she almost continually labours under a pro-cidentia uteri; and the body of the womb and vagina are so corroded by the acrimony of the urine, that there are four or five ulcers formed upon them. Besides this inconvenience, some of the thinner parts of the excrement are discharged at the bottom of this large cleft; and by introducing my finger at the bottom of the cleft, I can easily thrust the top of it through the anus.’

The next case is described in the fifth volume of the *Manheim Transactions*, by Dr W. Nebel. The girl lived only three months. In her the situation of the umbilicus was not much lower than natural, and there was an interval of half an inch between it and the upper edge of the protruded bladder. The bladder itself was seated rather higher than usual, and was totally unconnected with the external parts of generation, which were extremely simple, consisting merely of a chink in the centre of the lower edge of the abdomen, so small and narrow that it could hardly be seen. Between this and the bladder there were two small tubercles, and on the outside of these, two larger ones, having a considerable resemblance to those delineated in Mr Coates’s case. On dissection, the ureters were found larger than usual, and the pelves of the kidneys and tubuli belliniani were greatly increased in size. The emulgent arteries, on the contrary, were very small. The vaginal chink was pervious, and led to an uterus apparently perfectly formed.

The last case of this kind, on record, is described by M. Penchienati: It differs very considerably from all of the others; and the imperfect description both of the external appearances and of the dissection are the more to be regretted, as it might have assisted us in investigating the manner in which this malconformation is produced. There was no umbilicus in the usual situation; but, on examining the external parts of generation, which were moist, swelled, and very much inflamed, a kind of button was found in the natural situation of the clitoris, through which the urine was discharged. M. Penchienati conjectured it to be the umbilicus, with the urachus still pervious.

Four years after he examined it, he was informed that the child continued healthy, but that the pudendum was occupied by a tumour the size of a hen's egg, with its base resting on the vagina; and that on its surface there were two apertures, through which the urine was discharged, especially when the child cried, or when the belly or tumour itself was compressed. In about eleven months after this the child died, and he received the following account of the dissection. 'There was observed, in the first place, a tumour of about the size of a turkey's egg, covered with the common integuments, and appearing above and below the bones of the pubes. In the upper edge of the tumour, and a little to the right, there was a mammillary projection, surrounded with wrinkles, from which the urine flowed on compressing the belly, at the time when M. PENCHIENATI saw the child; but it was now closed, and the urine flowed from the other aperture, which M. PENCHIENATI supposes to have been an ureter. The bones of the pubes were separated from each other to the distance of three inches, and terminated in a kind of point, to which the recti muscles were attached. These muscles, in order to accommodate themselves to the convexity of the upper part of the tumour, projected forwards at that place in the form of an arch. The external labia were designated by a kind of cutaneous fold at the sides of the tumour; but there was neither clitoris nor nymphæ, although below the tumour there was found the orifice of the vagina, which was continued to the mouth of the womb, as usual.' From this dissection, M. PENCHIENATI concludes, that the tumour was occasioned by a hernia of the bladder, as he had conjectured at first. It is much to be regretted, that so very curious a case should not have fallen under the observation of more intelligent or more zealous anatomists. The tumour differed from all the other cases mentioned, by being covered with the common integuments; and, from the plates and description, it might be conjectured, that it differed still more remarkably in being hollow. But, if this were the case, how could the ureter traverse the cavity of the bladder, so as to open through the integuments? and, if it did so, how could any urine be collected within the bladder, so as to be discharged through the aperture of this same ureter on pressure? Is it not much more probable that this external aperture was not the mouth of an ureter, but an accidental rupture of the parietes of the bladder and integuments, after previous adhesion, in consequence of an accumulation of urine in the bladder, which could not otherwise be emptied? If this was not the case, where was the aperture of the other ureter? In what manner was the urine of the other kidney discharged? An accurate examination of this case would have confirmed

firmed or refuted a hypothesis which I have formed of the origin of this malconformation; but the opportunity has been neglected, and is not likely again to present itself.

Since the publication of the first part of this paper, Mr Burns, surgeon in Glasgow, has communicated to me another female case which he has met with. The deviations from the structure of the urinary organs were of the usual appearance. The tumour was about the size of a pullet's egg, of a spongy texture, an irregular surface, and a florid vermilion hue; was covered with a mucous exudation, and had the line of contact between it and the skin accurately defined. It was extremely sensible, and bled on the slightest touch. The parts of generation were more uncommon. From the inferior margin of the protruded bladder, the two labia originated, and run backwards along the rami of the pubes, terminating at length in the perinæum, or rather in what ought to have been the perinæum; for in this subject, strictly speaking, there was no perinæum. The rectum, instead of terminating at the usual place, perforated the posterior wall of the vagina; then, occupying the canal of the vagina, it passed through the vulva, and projected about an inch beyond the labia pudendi, bearing a distant resemblance to an imperfectly formed penis. It was of considerable size, possessed a writhing motion, and freely discharged meconium by an orifice situated in its apex. Mr Burns was not permitted to ascertain whether this intestinal production had any communication with the vagina, nor could he discover any meatus urinarius; and although the child died two days after birth, leave could not be obtained to inspect the body.

From these cases it appears that, although the external parts of generation sometimes deviate very much from their natural structure, the essential and internal parts are very seldom materially deranged. Many of the males seem to have been by no means deficient in sexual appetite, and to have secreted abundance of semen; although, from the structure of their penis, they were totally incapable of procreating the species; whereas, the impregnation and subsequent delivery of the Cornish woman affords us an example of a female, under the most unpromising circumstances, becoming a mother.

We may perhaps account, in part, for this malconformation being more frequently observed in the male than in the female, by supposing that the latter are more anxious, and more successful, in concealing it: still, however, the disproportion is so very great, that I cannot doubt its actually occurring much more frequently in the male. If so, it must depend upon some physical circumstance connected with sex, common to both, and yet different in each.

each. Now, the only circumstance of this description, besides the difference of robustness and delicacy, is the urethra, which in the male is longer and less simple than in the female, and therefore more liable to accidents. But in every case of this kind, male or female, the urethra is impervious. Is the obstruction of the urethra in the early foetus capable of producing the other deviations from the natural structure in this malformation?

Female Cases on Record.

1. Van Horne, *quoted* in Bartholini Anatome.
2. Ruysch, *Observ. Anat. Chirurg. centuria 4ta*, Amstelod. 1737. Obs. 23. p. 22.
3. Huxham, *Philosophical Transactions*, vol. 23. 1723. p. 408.; *also*, Oliver, *do. do.* p. 413; and Bonnet, vol. 33. p. 142.
4. Nebel, *Acta Acad. Theodoro-Palatinae*, vol. 5. Pars Physica, p. 345. 4to. Manheimii, 1784.
5. Panchienati, *Memoires de l'Academie Royale des Sciences. Années 1784-85. Premiere partie*, p. 387. 4to. Turin, 1786.
6. Coates, *Edinburgh Medical and Surgical Journal*, vol. 1. p. 39. 8vo. Edinburgh, 1805.
7. Cooper, *do. do.* p. 128.
8. Burns, *do. do.* p. 137.

Plates.—Ruysch, Huxham, Oliver, Bonnet, Nebel, Panchienati, Coates, Cooper.

VI. *General Observations.*

It may seem absurd to speculate on the causes which may have produced any deviation from the natural structure, as it is absolutely impossible to prove that it did not exist in the body at its original formation. But where this deviation is complicated; where its various circumstances have no immediate connexion with each other, and yet rarely, if ever, occur, except in combination; and where the one is seldom present without the other, it is surely much more agreeable to the simplicity of nature to suppose that they are the effects of accidental causes disturbing the organization of a body originally perfect. Thus, about fifty cases are recorded, in which, the urinary bladder being imperfect, the ureters open externally on the surface of the abdomen; and the same number of cases are recorded, in which the bones of the pubes, instead of being united by synchondrosis, are separated from each other; and yet the one of these very singular circumstances

stances never occurs without the other*. We cannot consider the coincidences of two such uncommon deviations, always in the same individual, as the effect of chance; and we are irresistibly led to conclude, that they are either connected with each other as cause and effect, or that they are both effects of the same cause.

In attempting to investigate the causes of a complicated malconformation of this nature, it is, in the first place, necessary to distinguish those appearances which are essentially connected with it, from those which are accidentally present; and it appears to me, that we shall be best enabled to discover their relative importance by dividing them into three classes, viz.

1. Those which are constantly present, and also peculiar;
2. Those which are constantly present, but not peculiar; and,
3. Those which are only occasionally present.

Now, as the circumstances included in the last of these classes are evidently not necessary effects of the cause, whatever it may be, and as none of them can possibly be itself the cause, or the primary effect of the cause, we may abbreviate our task by confining our attention to the two classes which are constantly present. But as those of the first class are sometimes absent where those of the second are present, it appears that the former are not necessary concomitants of the latter; and as the former never exist but when the latter are present, it becomes probable that the original cause of the malconformation, or at least the primary effect of that cause, is included in the second class. If, therefore, we find in that class any circumstance which plausibly accounts for the presence of all the other constant deviations, we may presume, with some probability, upon its being the cause.

In the present instance, the circumstances belonging to the first class, or those which are constant and also peculiar, are the ureters opening externally through an imperfect bladder, which forms part of the parietes of the abdomen, and the separation of the bones of the pubes.

The circumstances of the second class, or those which are constant, but not peculiar, are the enlargement of the ureters and pelves of the kidneys, and the urethra being impervious.

But the mere enlargement of the ureters and kidneys can, on no supposition, account for the other constant deviations; and as we have been already led, by vague induction, to suppose they may depend on the urethra being impervious, let us then consider what

* Unless, perhaps, in the case mentioned as the only exception by Prof. Roöse, to be found in J. G. Walter, *de dissectione synchondrosos ossium pubis in partu difficili*, Berlin, 1782; which I have not been able to procure.

what will be the probable consequences of such a circumstance occurring in the foetus, immediately at or soon after its formation. As soon as the urine begins to be secreted, it will accumulate in the bladder, and distend it as well as the ureters and kidneys. In the adult, ischuria proves fatal in a very short time, both from the rigidity of the containing parts preventing them from yielding to the distending pressure, and from the reabsorption of an excrementitious matter, highly deleterious to animal life. In the early foetus, however, circumstances are extremely different: In it the urine can contain very little, if any, excrementitious matter; and the whole containing parts are soft and plastic, the bones scarcely cartilaginous, and nowhere knit together. The bones of the pubes, therefore, yield to the distending pressure, and are separated gradually from each other, until they become so firm that it has no longer any effect upon them. But by the separation of the bones of the pubes, the recti muscles are also separated, and the bladder is deprived of its natural support on the fore part, while below, behind, and above, it is supported by the bones of the pelvis and spine, and various firm viscera. The whole distending force will therefore act on the anterior portion, which, with the skin, will be protruded forwards, and, becoming thinner, will at last give way, and burst outwardly. The bladder, being no longer capable of containing any urine, will contract, and, by the pressure of the abdominal viscera, will be inverted and protruded through the ruptured aperture. Thus, in addition to an impervious urethra, we shall find the bones of the pubes separated, the ureters opening externally through a ruptured and inverted urinary bladder, and the ureters and kidneys very much enlarged, which are all the essential circumstances of the malconformation. If a solitary case should occur, in which the bones of the pubes were actually united by synchondrosis, we must suppose that the urethra did not become impervious until after the bones had acquired some degree of rigidity; and if, on the other hand, a case should occur in which the bladder still remains hollow, and is not inverted or protruded, while the urine oozes through an aperture in the integuments of the abdomen, it would confirm the hypothesis now advanced, as it would afford an example of the bladder adhering to the integuments, and bursting outwardly, differing only from the common variety, in the size of the rupture being so small, as to allow some urine to remain in the bladder, and prevent it from being inverted. This seems actually to have occurred in Mr Penchienati's case; at least if we may confide in the drawings; for the description, unfortunately, is extremely imperfect.

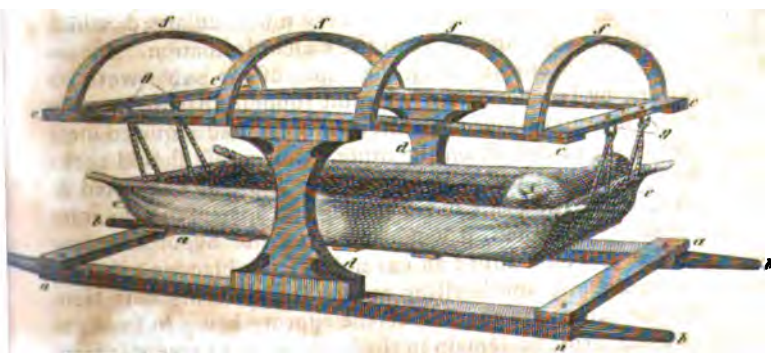
I am perfectly aware that this hypothesis rests upon several gratuitous and very objectionable suppositions. The only circumstance

TIN SHIELD USED BY MATHIAS USSEM.

see page 140.



LT COL. CRICHTON'S CAR.



From the *Edinburgh Medical Journal* N° 2.



cumstance which entitles it to any attention, is the manner in which it accords with all the essential deviations. The hypothesis of Professor Roose, which supposes the lusus to be the consequence of an external injury, at the same time separating the bones of the pubes, and bursting the bladder, does not at all account for the immense size of the ureters and kidneys. Besides, the rupture of the bladder, and separation of the ossa pubis, would frequently occur separately; and an external injury would be much more likely to force in the bones of the pubes than to separate them symmetrically. Such an effect I can only conceive to arise from an equal and gradual distending power within the pelvis itself; and the enlargement of the ureters can scarcely have been owing to any other cause than the accumulation and retention of urine. But urine could not be accumulated in the ureters, if they had always opened on the surface of the abdomen: it therefore becomes probable that they once terminated in a bladder which had no outlet; and as no other distending power, capable of separating the bones of the pubes, exists within the pelvis, the probability is increased.

But it may be objected, that we sometimes find the urethra impervious, where this malconformation does not exist. This is undoubtedly true; and it would be absurd to argue that the latter is a necessary consequence of the former. On the contrary, the rupture may take place in another situation, as through the rectum or perinæum. Examples of both are recorded as occurring in the human body; but they are more frequent in other animals, in which, it may be remarked, the external rupture of the bladder never has been observed. But a still stronger objection is afforded by children having been born alive, whose bladder had no outlet whatever. Now, these cases either prove that, in the human foetus, the kidneys secrete no fluid, or that the fluid, in these cases, like that secreted into all the shut cavities of the body, is reabsorbed. The former supposition appears improbable, both from the size of the kidneys in the foetus, from their being amply supplied with blood, and from urine being secreted immediately after birth, and during the fetal state of other animals. The latter supposition is not incompatible with the hypothesis advanced.

It is perhaps necessary to apologize for entering so fully into a mere hypothesis, liable to such objections; but, in these complicated deviations, it is of considerable importance to have some general principle to which they may be referred; and the refutation of an hypothesis frequently leads to the discovery of truth.

From the occurrence of this malconformation, physiologists may derive some assistance in investigating the functions of the
urinary

urinary organs, and the action of diuretics. It is probable that considerable absorption of the watery part of the urine takes place, while it remains in the bladder; for Devilleneuve observed, that it is considerably less saline, as it flows from the ureters, than when discharged in the usual manner by the urethra. The celerity with which the secretion of urine is increased after drinking diluent fluids, is also very remarkable, as the time seems to be by no means sufficient for its reaching the kidneys in the course of circulation. Mr Cooper mentions, that if Ann Carter had any thing given her to drink, *in a few minutes* her urine began to flow *guttatim*; and Devilleneuve expressly says, that, in the man he examined, after having drunk, four or five minutes scarcely elapsed until the flow of urine increased; and after certain diuretic liquids, such as cyder, he had scarcely time to cross the room (to use his own expression), until the discharge of urine was doubled.

Although this malconformation is totally incurable, the miserable situation to which it naturally gives rise admits of some relief from art. Mathew Usselm always wore a kind of concave shield of tin applied to the abdomen, so as to include the bladder, and penis. Its lower part formed a kind of funnel, leading to a reservoir placed between the thighs, which he emptied occasionally, by uncorking a tube proceeding from the bottom part. By this contrivance two very important purposes were served. It protected the sensible surface of the bladder from being irritated and inflamed by the clothes rubbing against it; and, by collecting the urine, it prevented the clothes from being spoiled, and becoming intolerably fetid. It was, in fact, an artificial bladder, and, on account of the unnatural distance between the thighs in these cases, it was worn with very little inconvenience. In some instances, however, Professor Roose's proposal of connecting the reservoir with the funnel, by means of an elastic flexible tube, might be adopted with advantage. By the use of this simple and cheap machine, Ann Carter would have been preserved from that extreme degree of misery which she experienced before she was admitted into St Thomas's Hospital; it therefore cannot be too generally known; and if the annexed sketch of it shall ever become the means of saving a single individual from similar wretchedness, I shall not have written this essay in vain.

Explanation of Plate III. Fig. 1.

- a a*, The shield for covering the bladder.
- b*, Loop for fixing it on by a strap passed round the body.
- c*, Funnel.
- d*, Reservoir.
- e*, Tube for emptying it occasionally.

III.

Observations on the Yellow Fever of America, tending to prove that it does not depend on any peculiar Modification of the Atmosphere; that it is not preceded by any Malignant Change in the Type of other Diseases; and that it is not accompanied by Glandular Swellings or Carbuncles. By Dr James S. Stringham, Professor of Chemistry in Columbia College, New York.

As all Europe appears to be much interested in our endeavours to investigate the nature of that epidemic which has for several years produced such devastation in our most flourishing sea-port towns, I shall take the liberty of offering a few remarks upon some of those facts which have been stated by the editors of the Medical Repository relative to the disease, as it prevailed here during the last summer.

You will find the statement to which I allude in the 26th Number, which is in the first volume of the second hexad. Without professing myself an advocate either for the doctrine of importation or of local origin, I cannot but view the account there exhibited as strongly inviting criticism, particularly as it respects some of those circumstances which the Editors have related as introductory to the disease in question. I shall briefly compare their statement, as to the diseases which prevailed here before the appearance of the yellow fever, with that given by physicians in other cities, where the same fever also raged. They state that, in the course of June, palsy and apoplexy occurred with *unusual* and *alarming* frequency; in some instances, they assumed appearances which more generally belong to *malignant fevers*; and to attentive observers of the succession of diseases, and the precursors of pestilence, they gave no small apprehensions of impending mischief. Towards the end of June and July, they say that many cases of scarlatina anginosa were observed; and that, during the same time, instances of catarrh and croup occurred, which could not be satisfactorily referred to variations of temperature. They also state that, before this time (*viz.* the end of June and July), instances of suspicious fevers had been observed in various parts of the town, which exhibited the strongest marks of malignity, &c. This is indeed a lamentable picture of the state of our city from the month of June, particularly as, at that time, Philadelphia appears to have been uncommonly healthy, notwithstanding which, the yellow fever made its appearance there nearly at the same time as in New York. The Editors quote a letter from a respectable physician in

in that city, who (they say) was himself an eye-witness, and a principal actor in the occurrences which he relates. From the authority of this gentleman; it appears that, "during the spring and early summer months of the year 1803, the inhabitants of Philadelphia enjoyed a state of health uncommonly favourable. Except among children, who were, as usual, affected by the disorders of the season, physicians found but little to call forth the exercise of professional skill. The few complaints that occurred among adults, were of the most *common, mild, and manageable* nature; nor did any event take place to darken the prospect arising out of this flattering state of things, till between the 19th and last of July," &c. The Editors also present us with a letter from Dr Dick, health-officer of the port of Alexandria, in which the yellow fever likewise raged. This gentleman takes no notice of any peculiar symptoms having occurred in the diseases of that place previous to the commencement of this fever, which, even during the whole season, he remarks, "was singularly limited in its operation." He further informs us, that the common autumnal fever existed at the same time in Alexandria; and it is worthy of notice, that nothing is said as to any peculiar malignity attached to it.

With regard to their observation, that palsy and apoplexy occurred with *unusual* and *alarming* frequency, I cannot find that it is confirmed by the experience of the most respectable practitioners in this city. From the best information which I have been able to obtain, it appears that, during the months of June and July, there were about five deaths from apoplexy, three or four from palsy, and about the same number from scarlatina anginosa. Surely no person, who is acquainted with the extensive population of our city, could infer from this, that these diseases occurred with *unusual* or *alarming* frequency. That several of those who are predisposed to apoplexy, and whose predisposition is increased by an intemperate and irregular manner of living, (circumstances which I know to have existed, so far as respects some of the cases alluded to), should be attacked on the approach of a hot season, may easily be accounted for, without having recourse to any peculiar modification of the atmosphere; but that either apoplexy or palsy have assumed the appearance of malignant fever, is a circumstance almost unknown to those physicians who were "eye-witnesses and principal actors in the occurrences which" took place. I say *almost*; because I have conversed with *one* gentleman upon the subject, who appears to have connected the two diseases in the case of a young lad who died with malignant fever, which, he thought, commenced with symptoms of palsy. But, from the very circumstance of the age of this patient,

patient, and but little hesitation to assert, that his paralytic affection was intimately connected with yellow fever, and merely a prologue to the tragic scene which was to ensue. In confirmation of this opinion, I beg leave to observe, that this case did not occur until the fever had unequivocally commenced its ravages. In all the other cases which have come to my knowledge (and I have been very particular in my inquiries), neither of these diseases, viz. apoplexy and palsy, were attended with any unusual or peculiarly alarming symptoms; at least, such as did occur had no kind of connexion whatever with those of malignant fever.

They likewise mention, that, 'during the months of June and July, instances of catarrh and croup occurred, which could not be satisfactorily referred to variations of temperature.' Why not? Were there no variations of temperature at that season; and, if there were, why might not these diseases be ascribed to this cause, as usual? Will either of the Editors undertake to particularize the extent to which the changes from heat to cold must be carried, in order to produce this effect? As to the suspicious fevers which occurred (exhibiting, according to them, the strongest marks of malignity), I confess I heard nothing of them; nor can I learn that any physician here had remarked them before the 18th or 19th of July, from which time we date the commencement of the yellow fever. I would not be understood as asserting that no case of malignant fever did occur before this period; but I contend, that there was no remarkable difference, either as to the number of persons attacked by it, or the malignity of the symptoms, from those fevers of the same type which have formerly occurred amongst us during the hot season.

I have been induced thus far to pursue my observations upon the editorial article, as it appeared in the Repository, with a view to show the inaccuracy of an opinion which has by some been adopted, viz. that the yellow fever is produced by a peculiar modification of the constituent parts of atmospheric air, and that this change is first evinced by its influence on other diseases, producing a variation in their symptoms and type, hence affording, in every case, a prognosis as to the epidemic which is to succeed. I cannot agree with the Editors in supposing that, from the diseases which occurred here in the spring and early part of the summer, any indication could be derived as to the necessary succession of yellow fever. But, even granting all that could be urged in this particular instance, still we perceive that, in Philadelphia, the health of its inhabitants was uncommonly good; the morbid affections which occurred there were of the most mild and manageable nature; and we have no documents whereby to suppose that the same circumstances did not exist in Alexandria; notwithstanding which, the yellow fever raged in both

these places. How happens it then, that, in New York alone, the precursors of pestilence were to be traced? Inasmuch as any alteration in the constituent parts of the atmosphere may be involved, after a careful and attentive analysis, I hold myself ready to prove that no such change did exist. My experiments were conducted in that part of the city which was most severely affected; and, so far as it respects the atmospherical proportion of oxygen, azote, and carbonic acid, there was no perceptible difference between such situations and those which were several miles distant. In order to show how very opposite such a result was to the preconceived opinions of some of our medical men, I need only mention an instance of one gentleman who called on me for litmus paper, with an expectation that, by exposure to the air, it would become converted to a red colour, in consequence of the action of the nitrous acid, which he supposed to have been formed in the atmosphere by the union of an increased proportion of the oxygenous with its azotic part. After twenty-four hours anxious expectation on his part, the paper was returned to me in the same state as before the experiment.

The Editors notice another circumstance as to the symptoms which accompanied the yellow fever, and which, in my opinion, merits particular attention. They remark, 'that the phenomena which distinguish the oriental forms of pestilence, viz. glandular swellings and carbuncles, were observed in a few instances, but not more frequently than heretofore.' From this it would appear, that our fever in no respect differs from the oriental forms of pestilence, since, in some instances, it is accompanied by those phenomena which more particularly distinguish them. In a few solitary cases, it appears that swellings, especially of the maxillary glands, have occurred; but, in almost every instance, these have been traced to the previous exhibition of mercury. To place the matter in a clearer point of view on this, as well as on the subject of carbuncles, I shall candidly submit to your inspection such facts as I have been enabled to collect.

On the 12th of August the Corporation opened an hospital at Bellevue (about three miles from this city), for the reception of the poor, and of such strangers as might be attacked with yellow fever. Two physicians were appointed to attend those who were brought to this institution. It appears that the whole number of patients admitted from the 12th of August to the 29th of October amounted to 186, and that of these about one half died.* In a late conversation with Dr Foster (one of the physicians appointed

* Several persons were received in the last stage of the disease, and some were actually dying at the time they entered.

pointed to this charge), he informed me, that notwithstanding the number of sick he had attended, and the various and malignant forms of the disease which his situation compelled him to witness, not one case, either of carbuncle, of axillary, or of inguinal swellings, had occurred. He mentioned one instance, in which the maxillary glands appeared to be somewhat affected. This patient was admitted on the twelfth day of the disease, and had taken large quantities of mercury before she came into the hospital, as was clearly evinced from the state of her mouth and fauces. In this instance the gland suppurated, and the patient recovered.

I am authorized to state, from Dr McLean, physician to the Dispensary, that nothing like carbuncle, as connected with yellow fever, ever came under his observation. He remarked that, two or three years ago, he had been in the habit of exhibiting calomel very freely in this disease, and that the swelling of the maxillary glands was frequent; but that, since he had changed his mode of treatment, no case of glandular affection had occurred to him. In addition to these, I have conversed with the four physicians appointed to attend the sick poor, all of whom concur in the statement just given. Dr Bayley, resident physician at the marine hospital on Staten Island (principally instituted for sailors), observes that, in former years, slight inguinal tumours did occur in some cases of ship fever, in the proportion (as he supposed) of about one in the hundred; but that no case of yellow fever, attended with glandular swellings or carbuncle, had ever been observed there since the establishment of the hospital. All these accounts are amply confirmed by the experience of several of the most respectable practitioners in this city, the results of whose private practice I have consulted, none of whom ever met with a case of yellow fever attended with carbuncle, or any kind of glandular swelling. For my own part, I declare that, from what I have seen of the disease, I never should have suspected that these appearances could have been enumerated, even in the most distant manner, as among its concomitants.

IV.

Observations on the Efficacy of Muriate of Lime, in the Cure of Scrofula and other States of Debility. By James Wood, M. D.
Physician to the Newcastle Infirmary and Dispensary.

IT is not improbable, that the muriate of lime is used, and with as much advantage, in every part of the kingdom, as it is in this place. With regard to the northern part of it, at least, this probability

bability is much increased by the circumstance of its having obtained a place in the late Edinburgh Pharmacopœia. Still, as I have not met with a single report of the virtues of this invaluable medicine, nor even any allusion to these, in any of the works intended for the quick dissemination of medical facts, I cannot any longer withhold presenting to the more immediate and general notice of the medical world, the muriate of lime, as a valuable remedy in scrofula and other states of debility.

I have already written on scrofula; and whatever intention I may have of offering to the public more enlarged observations on this disease, yet, in the mean time, I would feel in some degree accountable for the sufferings of all in this complaint, if I were not to endeavour to make known, as much as in my power, that those sufferings may be relieved, and frequently entirely prevented, by the remedy I have mentioned.

In my inaugural dissertation on scrofula, published in 1791, I endeavoured to show, from the experience I had had in that disease, that it was entirely a disease of debility, to be prevented and cured by those means which would prevent or remove that debility. At that time, though the tonics, with which we were acquainted, such as cinchona and steel, had the good effects to be expected from them, yet they were neither decisive at the moment, nor permanent; they only seemed to suspend the disease, until some change of the constitution of the patient removed the scrofulous action: and though, in the same dissertation, I mentioned my experience of the good effects of the aqua calcis, as a remedy in this disease, yet I could not ascribe to it, given separately, greater virtues than to cinchona, or other tonics, although I mentioned having perceived more evident advantages from them when conjoined, than from either alone. Cinchona bark infused in lime water, or the aq. benedict. of the old Pharmacopœias, were the forms I then used.

Very soon after the period I have mentioned, the muriate of barytes was recommended as a remedy in scrofula; and it came, I believe, into pretty general use. I found its good effects so uniform and certain, though slow, that it quite superseded, in my practice in this disease, all other remedies from the materia medica: and, situated as a physician to two extensive charities, the Infirmary and Dispensary here, where the objects labouring under this complaint are numerous, and the cases often of the worst kind, I felt relieved from one of the opprobria medicinæ, and wished, or rather hoped, not for any further victory over such a disease, as hectic often disappeared with its use; and the knife of the surgeon was rendered unnecessary, by caries yielding to its power.

While

While experiencing uniformly good effects from the muriate of barytes, the muriate of lime was recommended to my notice, and introduced into the Infirmary by Mr Ingham, one of the surgeons, as possessing great powers in dissolving tumours and obstructions of different kinds. The use of the remedy was confined, for some time, to particular species of obstructions; and afterwards, when given in scrofula, it was commonly united with decoction of cinchona bark. It was not, therefore, until the beginning of the present year (1804), that I determined to make trials and experiments with the muriate of lime by itself, and more particularly in the cure of scrofula. These trials were made on a very extensive scale, and they were immediately decisive in its favour. The muriate of lime produced all the good effects which I had experienced from the muriate of barytes, with two great advantages in addition; its action was more immediate, and no bad consequences attended an over-dose. With the muriate of barytes it was necessary to begin with the smallest dose, and to increase it *very gradually* to a certain dose; otherwise harm, not good, ensued. With the muriate of lime, we may commence with a full dose; and so far from there being any reason to fear from it any deleterious effects on the system, it is, on the contrary, wholesome in every point of view. It was often suspected that muriate of barytes might contain some portion of arsenic. Whether this was so, or whether barytes itself acted as a poison in a certain dose, is not at present to the purpose; it is sufficient to mention that, beyond a certain dose, muriate of barytes occasioned sickness, tremors, and loss of power. It is therefore no small advantage to possess a remedy, not only more immediately powerful (for it was always weeks before we reached the active dose of muriate of barytes), but also unattended with any fear as to the effects of a large dose, or of a graduated one long continued. In these respects, muriate of lime possesses advantages over muriate of barytes as decided as the vaccine over the variolous disease.

After what I have generally stated, I presume it to be superfluous to refer to particular cases in which the muriate of lime has been, and may be given with advantage. Indeed, the detail of such would far exceed my present limits; and any solitary one would not add any strength to what I have generally stated. I may only mention, that it has been given with advantage in incipient phthisis pulmonalis from a scrofulous cause; in all the external forms of scrofula; in rickets; and in all cases of hectic from great discharges.

A few words may also be added as to its mode of preparation. I first used it in the form of crystals, by dissolving three grains

in an ounce of water; but the process of crystallizing the salt was found to be too tedious and difficult for general use, and did not possess any advantage over a fluid solution of the carbonate of lime in muriatic acid. There was an inconvenience, however, I own, found attending the preparation in a fluid form, as well when the salt was dissolved in water, as when the medicine was prepared in a fluid state; I mean, the uncertainty of having it always of an equal strength. The method, therefore, adopted by an ingenious chemist of this town seems to have a preference. He does not crystallize the solution, but allows it to remain in a fluid state for use, and ensures its being of an uniform strength, by always reducing it to a given specific gravity. Perhaps it may be said, that if the proportions were always exactly the same, those, for example, of the Edinburgh Pharmacopœia, that the product would have an uniform specific weight. But as the quantity of water carried off by evaporation, or during the effervescence, is various, so I think the method adopted by the chemist to whom I have alluded is preferable. If a convenient specific gravity were once ascertained, the strength of the solution would be the same all over the kingdom. Perhaps the proportions of the Edinburgh Pharmacopœia do not differ much in strength from that which I used prepared in a fluid state, without any evaporation which can be avoided. In this state, I have found 30 drops for children, or a drachm for adults, given in water, twice or thrice a day, a sufficient dose. Those who are already acquainted with the value of this medicine may not receive much accession of knowledge from these observations; but those, who are not, will gain, in the muriate of lime, a power over the scrofula which they had not before; and indeed it has, in most cases, entirely superseded the use of cinchona in our Infirmary.

V.

Case of an Encysted Tumour, occupying the greater Part of the posterior Portion of the right Hemisphere of the Brain. By T. Bateman, M. D. F. L. S. Physician to the Carey Street Dispensary, and to the Fever Institution.

ELIZA APPLEBY, aged five years, (residing at No. 12. Great-Wild-Street,) about a week after the disappearance of the measles, was suddenly seized with convulsions of the whole body, which continued, with very slight intermissions, for nearly two days. In the fits, the limbs of the left side were observed to be rigidly

rigidly extended, while those of the right side were in constant motion. After the cessation of the convulsions, she complained of a pain in the right side of the head, and frequently exclaimed, 'That there was something coming in her head.' From that time also, the mouth was drawn towards the left side, and she was observed to squint much; but the nurse is ignorant when her sight became affected. She was hot and thirsty for some days, but never lost her appetite. Her bowels continued regularly open, and the limbs of the left side were in a state of paralysis. The feverish state soon subsided, but the other symptoms continued for the space of five weeks, with occasional spasmodic twitches of the right side, and of the muscles of respiration; and she was again (August 22d) attacked with convulsions. The left limbs, as before, were rigidly contracted during the paroxysms, while those of the right side were constantly in motion. She was now, by the direction of a physician, ordered to have *mercurial ointment* rubbed into her thighs, which, in five or six days, produced great soreness of the mouth; she was also blistered on the head. The convulsions recurred once on the 23d, and then left her. After the application of the blister, a soft swelling was observed arising near the sagittal suture, which extended itself obliquely down the right parietal bone to the anterior part of the ear. On September 6th, the parents applied to the dispensary in Carey Street.

She now lay on her back, and screamed violently, if any attempt was made to raise or turn her. She seemed to be, in general, without pain, but occasionally made momentary complaints of pain in the right side of the head, and put her hand to the external tumour; but she appeared speedily to forget it; often talked in a lively way to the other children, and sometimes repeated her childish verses, &c. as in health. Her temper had become extremely irritable. She never had any tendency to stupor or coma. Her hearing was perfect, but her sight completely lost; the pupils were dilated, and the right eye was turned towards the nose, while the axis of the left eye was directed forwards. She had no thirst; the skin was cool, and the pulse scarcely accelerated. The appetite was voracious; she was very frequently asking for food, but if the demand was not immediately complied with, she seemed for a few minutes to forget that she had made it; all that was given to her she ate greedily. From time to time she lay silent for a minute or two, grinding her teeth strongly together, and with the eyes and eye-lids in rapid motion. The bowels were slightly costive. The left arm and leg had somewhat recovered their powers, but were nearly useless; and she was daily growing more emaciated. The external tumour apparently con-

ained a fluid of a thick consistence. Pressure on the tumour produced no pain, except round the circumference of it; it caused no stupor, nor did it increase the other symptoms.

It appeared, from these circumstances, that this swelling had no communication with the brain, and, by the recommendation of my judicious colleague Mr Pearson, on the 14th of September it was punctured with a lancet, and five or six ounces of pure pus were evacuated.

I ordered her $\frac{1}{2}$ grain of digitalis twice, and afterwards three times a day, at first with $\frac{1}{4}$ grain of calomel; but that, having purged her much, was in a few days omitted.

Oct. 9. The tumour increased again for a few days, but is now quite gone. She has continued to take the digitalis till to-day. She complains less of her head; has greatly recovered her flesh and healthy complexion. The other symptoms continue unchanged. With these exceptions, the functions are natural. There are no symptoms of fever. She was ordered to discontinue her medicine.

— 26. Has continued till to-day nearly in the same state, except that she has been again rather losing her flesh. This morning she was attacked with frequent convulsions of the whole body, the right side being now nearly as much affected as the left; the lower extremities being rigidly extended, and both arms, but more especially the right, in constant motion. Between the paroxysms she lies quiet, seems perfectly sensible, but is unable to articulate, and often appears to sleep; complains of no pain. The pulse is now frequent. Bowels open.

Nov. 6. She has taken the digitalis again when it could be given. The convulsive attacks have been more frequent these few days past. She now seems quite insensible; takes no food; groaned a good deal these two nights; breathes at present with great labour, and with a stertorous noise. Pulse very frequent, but distinct and regular. The eyes are glassy and dull, and much sunk. The strabismus and blindness continue, but the pupils are not much dilated. The strength is much sunk. She is evidently moribund.

— 7. Died at five this morning.

On examination after death, the head was observed to be large in proportion to the body, and slightly prominent on the right side; the scalp on that side adhered more firmly to the cranium; the sutures were perfectly closed.

On opening the head, the dura mater on the right side was found adhering very strongly to the cranium, and to the pia mater; or rather both these membranes adhered firmly to the brain. The dura mater on that side was thickened, and more opaque than natural.

On

On the left side, its structure and degree of adhesion were natural as well as the external and internal appearance of the brain.

The right hemisphere, especially in its posterior part, was obviously more tumid, the convolutions were much less distinct, and its surface more even and smooth than natural. On cutting into it, the substance was firm and tough, and with very little appearance of the intermixture of the cortical part. The posterior lobe was nearly filled with a globular sac, which was separated with the greatest facility, by the fingers, from the surrounding substance of the brain. The sac was very vascular, of a strong texture, and considerable thickness, and contained about 4 ounces of pure pus: it was about three fourths of an inch distant from the cranium, and surrounded on all sides by the substance of the cerebrum, except a very small portion which was next the posterior part of the right ventricle, and formed a small part of its boundary.

The ventricles were all considerably distended with water.

It may be doubted whether the emaciation was in this instance retarded, or rather removed, by the influence of digitalis, notwithstanding its well-known powers of diminishing irritation, and the hectic which accompanies severe organic affections; but it is probable that its sedative effects, combined with the removal of the irritation of a large external tumour, produced the temporary alleviation of hectic symptoms.

The preceding case is not offered with a view of deducing from it any general conclusion. It seemed valuable on account of the connexion of the symptoms with the morbid state of the organ, as ascertained by examination after death; and, on that account, worthy to be recorded. We are yet very ignorant of any marks of discrimination, in the living body, of pressure or irritation, as applied to that very complex organ, the brain. The relations of the older anatomists have thrown little light upon this subject, in consequence of the imperfect accounts they have left us of the symptoms. There is a case well related by Platerus, and copied by Bonetus in his *Sepulchretum*,* which, in the course of the symptoms, somewhat resembles the foregoing case. A tumour of a smaller size and greater solidity than the one before us, being of a substance like the coagulated white of an egg, was found seated in the anterior portion of the right hemisphere; convulsions nevertheless occurred. From six very valuable cases, which are too little known, from their being published in a work of ve-

* Sect. *De oculi affectionibus*, Obs. I.

ry limited circulation among medical practitioners, * Mr Anderson, surgeon in Leith, has drawn the following conclusions.

1. When one hemisphere of the brain is affected, it generally produces morbid symptoms on the other side of the body.

2. When both hemispheres are affected, the whole body suffers.

3. Though only one hemisphere is affected, when the injury is great, the whole body suffers.

4. Though the cerebrum alone is hurt, it produces morbid symptoms in all muscles of voluntary motion, whether their nerves arise immediately from the cerebrum, the cerebellum, or from the medulla oblongata.

5. In cases of external accident, where one side only is affected, the prognosis is more favourable than when both sides suffer.

The only other approach to generalization that I have met with, is an observation by Dr Baillie. † ‘It is worthy of remark here,’ he says, ‘that when tumours of any kind press upon the thalami nervorum opticorum, or the optic nerves themselves, within the cranium, vision becomes impaired in various ways; and that, when tumours press upon the tuberculum annulare, or the medulla oblongata, convulsions are very apt to occur.’ The first part of the observation will, I believe, be allowed by every one to be correct. But the last, I apprehend, is not invariably supported by the records of pathology; and, with the greatest deference to such high authority in morbid anatomy, it may be questioned whether we are yet in possession of a sufficient number of facts, to warrant any general conclusion.—*Ars longa, judicium difficile*.

VI.

Two Cases of Acute Rheumatism, treated with Opium; and some Observations on the comparative Merits of that Method, and of the Treatment which is founded on the Principle of Depletion. Communicated by J. J. De Roches, M. D. Physician to the City Dispensary, and Fellow of the Medical Societies of London and Edinburgh.

FRANCES PICARD, a married woman, aged 27, strong and healthy.

Sept. 24. 1804. She was seized two days ago with cold shiverings, succeeded by heat, and pains in her knee-joints and wrists.

* Transactions of the Royal Society of Edinburgh, Vol. II. p. 17.

† Morbid Anat. p. 457.

wrists. They are now swelled, red, and painful. Much thirst. Pulse 106, and very strong. Has taken a purgative yesterday.

Sumat vespere Pilul. ex Opii puri gr. iſs. et repetatur cras mane, meridiē et vespere. Bibat Decoctum Avenaceum ad libitum; vel, si vires deficerent, Decoctum Carnis, et *Gin* valde dilutum cum Aqua calida. Jaceat intra lanca tegumenta.

Sept. 26. A copious sweat broke out about half an hour after she had taken the first pill; it was kept up in a greater or less degree for 36 hours, and the strength supported by weak broth and toddy. To-day she feels languid and giddy when sitting up; the affected joints are stiff, but neither painful nor swelled. Belly costive. Pulse 94, and not so strong.

Sumat Pulv. purg. statim.

— 28. The powder has operated; the appetite is good, and the use of the limbs becoming more free and easy. Sense of languor and giddiness gone. Pulse natural. Sleeps well.

— 30. Symptoms continue the same.

Sumat Pulv. Cinch. 3 j. bis in die.

Oct. 4. Feels well. Discharged cured.

JAMES BEU, aged 36.

Jan. 10. 1805. Was seized five days ago with acute pains in his limbs and joints, accompanied with cold shiverings; they are now swelled and painful. Upon the first accession of the pains, he took gin, which did not give him any relief. Bowels costive. (This account was received at the Dispensary from the patient's wife: the man had been for a fortnight under my care for a chronic diarrhoea, the remains of a former dysenteric affection.)

Sumat Pulv. purg. statim.

Bibat Decoctum Avenaceum ad libitum, et jaceat intra lanca tegumenta.

— 11. Upon visiting him to-day, I found him with all his joints, particularly his knees, swelled, and very painful. The powder has operated to-day, and once only; he has been lying between blankets, and drinking warm gruel, which has produced some sweating, and somewhat relieved the pains. Pulse 96, and strong.

Sumat Pilul. ex Opii puri gr. iſs. ter in die.

Accinctus ad sudorem bibat, ad libitum, Decoctum Avenaceum.

— 13. The first pill produced a copious sweat, which was kept up by three succeeding ones for 30 hours. The sweating soon relieved the pain, but brought him very low, notwithstanding that broth had been substituted for gruel. The swellings have

have disappeared. Complaints of pain in his head and back. No stool. Was up when I called.

Sumat statim Pulv. purg.

Utatur Dieta nutritive.

Sumat Pulv. Cinchon. 3 j. ter in die, incipiens cras.

Jan. 14. Sleep much disturbed last night. The powder has operated twice. Pain of head gone. Limbs stiff, but not painful. Thirst not very urgent. Not so faint to-day. Pulse 106, and not so strong.

Contin. Pulv. Cinchonæ.

Infricetur partibus rigidis Linim. Saponis.

— 15. Continues nearly in the same state. Can walk up and down stairs with a little assistance. Took by mistake, yesterday, a purging powder, which operated several times. Rested ill. Pulse 96. Stiffness of back greater to-day. Little thirst.

Contin. omnia.

— 16. Appetite improving. Some stiffness of the left thigh and leg. Rested ill.

℞ Mist. Mucilag. ʒ viij.

Acid. vitriol. dilut.

Spir. Lavend. comp. ana 3 j. Misce.

Sumat Coeh. ij. majora, ter in die, cum Pulv. Cinchonæ.

— 20. Some griping from the mixture. Is improving rapidly in his appetite and strength. Pulse 88, and of natural strength. Belly rather costive.

Contin. Med.

— 24. Recommended to use sudden cold applications to his back, after which he is to have the part well rubbed with warm flannel in the morning.

— 27. Has used the cold application once only, and with advantage. Did not know that it was to be continued.

Repet. Pulv. Cinch.

Repet. Aqua frigida, bis in die.

— 30. Back much better. After having been out, he has felt some pain in his right shoulder. The right arm still continues weaker than the other. Appetite very good. Is working now at the loom.

Utatur fotu salino calido parti affectæ.

Feb. 1. The washing has rather augmented the pain for the moment. On the whole, he is well and hearty. Continues regular at his work.

Utatur Aqua frigida, ut antea.

Discharged cured.

Cases of acute rheumatism cannot be recommended to the notice of the reader, either as rarities, or as likely to afford any

ny new information to the dogmatical nosologist, who has irrevocably placed *rheumatism* among the phlegmasiæ, and treats it leisurely, with all due attention to the antiphlogistic regimen, in spite of the painful obstinacy of the symptoms, and the waste of life, which the complaint and the abuse of words conspire together in carrying often to an alarming length. That rheumatism differs in its nature from common pneumonia, enteritis, hepatitis, may be rendered probable,

1. By the difference in the termination of the respective morbid actions of those parts. Acute rheumatism very seldom terminates in suppuration, gangrene, or exudation of lymph: if it does not terminate speedily in health, the parts affected are left in a wasted, irritable, and atonic state. Inflammation of the lungs, stomach, bowels, &c. if they end not soon in resolution, will produce suppuration, gangrene, or adhesions.

2. The general pyrexia is a necessary symptom of the inflammation of the viscera; the local affection ceases when the inflammatory action of the vessels ceases. In acute rheumatism, on the contrary, the pain has been known to continue, as before, after the pulse had been brought by digitalis below the natural standard.

3. Acute inflammations of the viscera terminate in a short space of time, compared to that during which the symptoms of acute rheumatism have been known to continue unabated.

4. Experience shows that the practice so generally successful in cases of common phlegmasiæ is, upon the whole, but of little efficacy in the cure of acute rheumatism; that rheumatic patients are, by the loss of blood, freed rather of the faculty of feeling, than of the cause of their painful sensations, which repeatedly return on their recovering from the temporary exhaustion; that blood-letting has made more cripples than effected cures among them; in short, that the most strong and healthy constitutions, falling into the hands of the most skilful and sagacious practitioners, have been frequently known to move the compassion of the by-stander, and to excite a strong suspicion, that the event would have been more fortunate to both, if there were one genus less among the numerous tribe of phlegmasiæ.

The nosological dislike to opium, in pure inflammation, is so strong, that its very name shocks the ears of the steady practitioner, regularly bred in the Cullenian school; and patients are left sleepless, comfortless, bloodless, but full of pains, until it pleases their medical attendants to declare that the stage of acute inflammation is over. It is fortunate, however, that men exist, who, either from mere good sense, or from the blind spirit of opposition, are naturally inclined to distrust the soundness of notions

notions the most generally received, when they appear inadequate to the views they were designed to answer. Such has been the case with some of our most respectable practitioners of the metropolis. Blood-letting in acute rheumatism is by them laid aside; and to opium alone they have dared to trust for its cure. The practice is so well known, and its good effects so generally acknowledged by all who have repeatedly witnessed them, that it will not be deemed improper in me to deduce from the success of opium, in the treatment of acute rheumatism, a collateral proof of the unsuitableness of the present nosological notion concerning the nature of that complaint, when we compare the result with the known influence of opiates in other cases of phlegmasiæ.

The two cases above related, have been chosen among many others of a similar sort,

1. Because both patients had been previously attacked with the same disease; both had been repeatedly bled in the day, and made to sweat at night; one of them had been kept under the rod for three months, the other for two; the former was left unfitted for any sort of business for three other long months, the latter for one only.

2. Because *Beu*, naturally a weak man, and so much debilitated, besides, by a long continued diarrhoea, that his children must have begged for their bread in the street, or been thrown naked on the parish, if, true to academical instruction, I should have been squandering away the pabulum of life, with the happy prospect of leaving an industrious father, for months to come, bemoaning, in an helpless state, the practice that saved his life, only to prolong his sufferings. If I have insisted much on this point, it is because that consideration is of importance in our practice among the indigent classes of society. With them, labour, and daily labour alone, can keep body and mind together; and small will be the use of dispensaries, if their attendants ever lose sight of the peculiarity of their situation. Nor is the use of opium confined to those cases only, in which, from general debility, that of the lancet might be most injurious. The woman *Picard* was a stout, healthy woman; and, nevertheless, the disease may be said to have yielded to opium in less than four days. I am informed, upon very good authority, that this practice has been almost invariably successful among some of the stoutest peasantry of Great Britain; and although I am far from supposing that there can be no case of acute rheumatism in which the cure is to be premised by the loss of blood, I would never have blood-letting considered as the main ground of our treatment. In some cases of particular determinations of blood, in some metastases of rheumatic affections, blood-letting may become necessary,

necessary, as we sometimes let blood in nervous disorders, in the eruptive fever of small-pox, &c. whenever urgent and accidental symptoms require it.

The rheumatic pyrexia seems to be owing to a peculiar irritation, which is removed by large doses of *opium*; while, at the same time, by determining its action to the skin, by means of warm covering and copious dilution, we do away its bad effects on the circulating system, and employ the morbid energy of the vessels in keeping up, for a certain length of time, the action of the excretories of the skin, the cessation of which seems to be the most general cause of the complaint. That determination to the surface is the *sine qua non* of the cure: unless it be effected, *opium will not relieve, but rather augment the sufferings of the patient.*

I shall terminate the observations which I have taken the liberty to state, by quoting the words of the late Dr Heberden, a man whom forty years of experience had taught to disregard the dictates of schools, and to attend to his own powers of perception, in preference to those of the most respectable and most respected of his predecessors.

*' Sydenhamus opio uti prohibet in hoc affectu; pace tamen tanti medici, dixerim dolores sic impune leniri, et somnum tuto invitari. Præterea, meo judicio, opium non tantum modo importuni mali præsidium est, sed multum confert ad ipsum morbum tollendum, ' **

VII.

History of two Cases of Tumour in the Breast; with some Reflections.

Communicated by Henry Reeve, M. D. Fellow of the Medical Societies of London and Edinburgh.

MARY CUYLER, aged 24, a married woman, of melancholy temperament, with black eyes and black hair, was admitted into the Norfolk and Norwich Hospital for a tumour in her right breast. There was a small hard knot in the left breast, which had remained ten years, without producing any pain, and without undergoing any visible alteration. She gave the following history of the progress of her present complaint. In the beginning of September 1803, she first discovered a small knot in her
right

* Gul. Heberden, *Commentarii de Morborum Historia et Curatione*, p. 347. De Rheumatismo.

right breast, but felt no pain or uneasiness from it. It continued nearly in the same state, or kept changing almost imperceptibly, till January, when it began, without any apparent cause, to be enlarged, and to press against the skin and surrounding parts. Its progressive increase then became more rapid, and has continued so till the present time. The tumour is now very large. There is no puckering of the skin, no contraction of the nipple. The integuments of the whole breast have a smooth appearance. The surface of the tumour is even, and covered with dark blue veins. It has not the irregular hardness of a carcinomatous tumour. There are no swellings under the axilla, and no apparent disease in the neighbouring parts. The tumour is moveable, and affords the sensation of its contents being fluid. She feels little pain, except what seems referable to the weight and distension of the tumour. Her general health is now tolerably good; but she has been lately under the care of a physician for general weakness and swelling of her legs, complaints not apparently connected with the disease in her breast. After remaining three weeks in the hospital to watch the progress of the swelling, it was found to increase so rapidly, and it became so painful from the stretching of the skin, that it was deemed expedient to remove it. No topical remedies were employed. A small puncture was first made into the tumour, which discharged a few ounces only of gelatinous fluid. It was then removed by the knife. It weighed 10 lib. 2 oz.; and, before its removal, it measured half a yard across, and $\frac{1}{4}$ ths of a yard around. When divided with the knife, it had the appearance of a condensed cellular substance, or hardened steatoma. Every portion of the diseased breast was carefully dissected from the pectoral muscle. Some integuments were preserved, and, as they had no marks of disease, were placed in contact with the subjacent parts. The patient went on well for a fortnight after the operation; she recovered her health; the wound assumed a healthy and granulating appearance; some parts, which were covered by the integuments, healed by the first adhesive inflammation, and the exposed surface was considerably reduced in size. At the end of the second week, a small fungus arose from the ulcerated surface. This was succeeded by several others in different parts of the sore. They were of a pale red colour, and had the appearance of granulations rising above the surrounding parts, from excess of morbid action. Pus was secreted in large quantity. No hemorrhage took place. One of these fungous excrescences was so slightly attached, that it was easily removed by the finger nail being insinuated under it. The rest, which were more firmly attached and deeper seated, were removed by the knife. The spots whence these excrescences were removed looked well for three or four days; then they assumed their former

mer shape. Fungus arose again, and spread so rapidly, as to cover the whole surface of the wound, and even to extend over the margin of the surrounding skin and integuments. The breast had the cauliflower-like appearance, though the parts in contact with it did not seem to partake of this morbid action. No glandular swellings occurred, and the skin remained unaffected. The patient complained very little of pain in the part. One day (July 25.) she was attacked with acute pain in the right side of her head, accompanied with pain in the right eye, with dilatation of the pupil and impatience of light: no inflammation followed; and these symptoms subsided in a few days. Her general health became much impaired by the constant and profuse discharge of pus, and by hectic fever. She left the hospital, at her own request, in the beginning of August, and she lingered about a month, and then died. The fungous excrescences attained a very great size before her death.

Whilst M. C. was in the hospital, her sister, ætat. 18, unmarried, of the same temperament and habit, was admitted for a similar complaint. She had a tumour in her right breast, and it corresponded in its history and progress with that of her sister's, already described. It began in the form of a small knot, about a year ago, without any pain; it continued almost entirely the same for some time, till two months before her admission into the hospital, when it began to increase, without any apparent cause; and within this last fortnight it is considerably enlarged. Her general health is perfectly good in every respect. There are no marks of scrofula, either in her or in her sister. She was unwilling to submit to any operation, from the dread of the melancholy event of her poor sister's case. She went home into the country. The tumour continued gradually to increase till it burst. On visiting her (February 1805) she was found sinking rapidly, suffering exquisite pain, the large tumour hollow, and the cavity studded, as it were, with fungous excrescences, discharging profusely fetid matter. She could not continue long in this hopeless state of aggravated suffering. It may be proper here to mention, that two of these patients' brothers died about the period of manhood, affected with some anomalous complaints in the head; their mother died dropical; their father is living, a strong and hearty man.

In executing the painful task of recording such instances of formidable and unrelieved diseases, where all our hopes are baffled, and all our means of cure fail, it is some consolation to reflect, that instruction may be gained even from disappointment. If any apology were necessary for the minuteness of the detail, or if any objection should be urged against the history itself, as being destitute of utility, we might quote the high authority of *Lord Bacon*,

Bacon, who alludes to these unsuccessful records in his profound Reflections on the Means of advancing Medical Science. 'Neque igitur dubitabo (says he) inter desiderata reponere opus aliquod de curationibus morborum, qui habentur pro insanabilibus; ut evocentur et excitentur medici aliqui egregii et magnanimi, qui huic operi, quantum largitur natura rerum, incumbant;—quando hoc ipsum, istos morbos pronunciare insanabiles, neglectum et incuriam veluti lege fanciat, et ignorantiam ab infamia eximat.*'

The first question which presents itself, in reflecting upon these two unfortunate cases, is, What name can be assigned to the disease? If the symptoms so ably stated by Mr Abernethy in his Classification of Tumours be admitted, as characterizing all carcinomatous tumours, it is evident that we must look to some other definition to arrange the cases of Culler; for in these the leading characters of cancer were wanting. They seem to resemble that singular disease called *Fungus Hematodes*, so well described by Mr Hey of Leeds; yet there was no hæmorrhage, no dark-coloured fungus like coagulated blood. However, the rapid progress of the disease, its reappearance after extirpation, and its resistance to all remedies, may perhaps prove, that it partook more of the nature of that very formidable class of tumours than of any other hitherto described. Heister, indeed, in his account of cancer, (chap. xvii. B. 4.), describes, in general terms, the manner in which these two cases began and terminated; but the slow and progressive increase of morbid action, and the derangement of the structure of all parts in contact with it, is now generally considered as the usual course of true cancer.

Mary Culler was married in January, and about that time the tumour in her right breast began to increase. She considered herself pregnant too; and this change in her constitution might excite the local diseased action, or at least accelerate its progress. Such a cause could have no influence in her sister's case. The wound, after the removal of the breast, ceased to heal kindly as soon as the integuments which were saved had united to the parts underneath; and it became necessary that new skin should be formed, or the fibres of the old skin be extended, in order to complete the cicatrix. This process of skinning, even in healthy constitutions, is always slow, and apparently a work of difficulty. Perhaps the series of actions necessary for the formation of a covering to the granulations was changed to a morbid state by some peculiarity in the system at large, or in the part. With regard to the means which ought to be adopted to prevent the fatal termination of such cases as these, it is wrong to expect complete success from one measure, because another has failed.

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* De Aug. Scient. cap. 2. lib. 4.

In these cases, we have seen the effects of the disease being left to nature, and we have witnessed the unavailing attempt of art. Early and complete removal of tumours in the breast appears universally recommended. The removal was looked upon as complete in the elder sister's case; and the early admission of it was refused by the younger. Many other remarks might be added, but they are unnecessary. The history of these, and of similar cases, will abundantly show, that much remains still to be learnt respecting the formation, the distinction, and the best mode of treating this curious and important class of diseases. It remains now only for me to state, that I am indebted for some particulars of these two cases, the whole progress of which I had not an opportunity of observing, to my much esteemed friends at Norwich; and I am obliged especially to Mr Colman, one of the surgeons at the hospital, under whose more immediate care both these patients were admitted.

VIII.

A Case of Cancer of both Testicles, which terminated favourably by the supervention of Scurvy. Communicated by Mr John Livingstone, Surgeon of the Cirencester.

ON the 6th of June 1795, (the day after the *Cirencester* East-Indiaman sailed from Portsmouth), James Foster, ætat. 35, who had the preceding night succeeded in imposing himself on the ship as a healthy seaman, was discovered to be entirely unfit for duty, in consequence of cancer affecting both testicles and spermatic cords.

He appeared to have been a very stout man, nearly six feet high, fair complexion, and red hair. He was now somewhat emaciated, and his countenance indicated great suffering from pain. He said that he had lived a very irregular life for some time past; that lately he had been half starved, concealing himself from the press; and that he had hurt his testicles by falling into a ship's hold three weeks before. These, with many other particulars, were probably not true, but calculated to conceal that he had made his escape from Haslar Hospital a few days before he came on board the *Cirencester*.

On examination, the testicles appeared considerably enlarged; their surfaces felt very unequal and hard. He complained much of pain from pressure. The anterior part of the scrotum appeared

ulcerated, and pretty much inflamed. A considerable discharge of a thin fetid bloody matter issued from three small openings. Both spermatic cords felt knotty, and considerably thickened. He complained of very frequent sharp pains darting through both testicles, and shooting towards his loins; a sense of weakness and constant pain of his back; loss of strength and sleep; and impaired appetite.

As it was now too late to attempt his cure by extirpating his testicles, a palliative plan of treatment was adopted. Various dressings and internal medicines were employed, without any advantage, excepting the momentary relief he obtained from cicuta and opium.

For about a month after we sailed, although the scrotum had daily become more diseased, and the openings had increased, both in magnitude and number; the discharge did not increase, but had lately put on a milder appearance, and was less fetid.

The thermometer, for some time past, had stood from 80° to 83° Fahrenheit, and was soon afterwards much lower. For sixteen days, a considerable discharge had been kept up from a seton inserted in the inside of his left thigh: this was discontinued, on a supposition, that it contributed to exhaust his strength, already very low.

During the month of July matters became gradually worse; so much so, that, by the end, fully one half of the scrotum was destroyed. All the openings had now joined, and formed one terrible cancerous ulcer. The edges of the remaining integuments exhibited a serrated appearance, in some places retorted, in others inverted.

The testicles were now much exposed. They had a bloody fungous appearance, and adhered, but had not greatly increased in size. The pain was nowise diminished. The discharge had considerably increased, and was now extremely offensive. He was much emaciated, and almost entirely confined to bed.

By the end of August the scrotum was entirely destroyed, and the integuments of the penis began to suffer. The discharge was less; the fungous tumour had subsided one half; and the pain was far less troublesome. He was exceedingly weak, obliged to confine himself constantly on his back, and was able to take very little food.

The testicles seemed now rapidly consuming away, and a hæmorrhage was hourly looked for, to put a period to his truly miserable existence. On the night of the 10th of September he was seized with a dreadful hæmorrhage from the right spermatic artery, which was not discovered till he had lost a very large quantity of blood. Before the bleeding could be restrained, he was almost speechless;

speechless; his pulse could not be felt at the wrist; and he seemed reduced to the lowest possible degree of weakness.

For some days afterwards, his existence was protracted by wine and other cordials, when it was discovered that the scurvy (which had lately become pretty general on board) was superadded to his other misfortunes.

Although, during the ten succeeding days, the scorbutic symptoms made considerable progress, he seemed to recover a little strength; * he had no pain; and the hæmorrhage did not return. The ulcer had made no further progress on the integuments of the penis. The discharge was now very small; and although of a thin bloody appearance, the fœtor was greatly diminished.

We now arrived in the Straits of Alas, where we obtained suitable refreshments. Foster was treated like the other scorbutic patients. He had as many limes as he could use. Diluted lime juice was employed to wash the ulcer; and lint, moistened with the same, was the only dressing afterwards applied. He now gradually recovered strength; and, without any alteration in the plan of cure, he was able to do the duty of a seaman in two months. He continued in perfect health for ten months afterwards, when the ship completed her voyage.

When the small remains of the fungous tumour was nearly skinned over, it seemed evident that the natural structure of the testicles was entirely destroyed. I regret that an extraordinary degree of delicacy with which he seemed to have been seized after his recovery, prevented me from obtaining the information I wished on certain points. I have therefore only to add, that he got very stout, and in every respect an excellent seaman.

IX.

* Every day since the appearance of the scorbutic symptoms, he had had (with about fifteen of the worst of the scorbutic patients) a quantity of small salad, which he ate with great satisfaction. To this, perhaps, the preservation of his life, and that of many others, is to be attributed; for when we failed, no lime juice could be procured. This was the only article on which any dependence could be placed in combating this dreadful complaint, and for which we had entirely to thank our commander, Captain Martin Lindsay, who, for the benefit of the sick, converted a part of his own apartments into a garden, which he managed himself with wonderful success.

IX.

Practical Observations on the Pneumonic Diseases of the Poor. By Charles Badham, M. D. Physician to the Westminster General Dispensary.

HAVING had, for the last two years, extensive opportunities of making observations on disease, from my connexion with a public institution in which the cases are very numerous, (the Westminster General Dispensary), I have endeavoured to improve them, by recording, from time to time, any thing which has appeared important, or particularly interesting. In looking over my notes, I have selected some remarks, which I send as an early contribution to your new Journal.

Of the diseases to which the labouring poor are subjected, none, I apprehend, are more frequent or more severe, than the diversified affections called *Pneumonic*; and as they are the first of Dr Cullen's order of Phlegmasize on which I find any remarks, I shall begin with them.

Our cases of Pleuritis, while equally dangerous, have been always more insidious than the disease described in the First Lines under this title. In several which have terminated in suppuration, the symptoms, though constant, have been so very slight, that venesection has scarcely been indicated. In one of these cases, in which I resolved to have the patient bled, from a belief that he would easily bear it, although the symptoms were not urgent, we afterwards found, on opening the chest, several pints of matter; which circumstance, till within a day or two of his death, could not by any possibility have been suspected. I saw this man for the first time on the ninth day of the disease: had he been bled earlier, there is much probability that he would have recovered. I fear we rely too much on blisters, and are too scrupulous in the use of the lancet in pectoral disorders. There are at least very few in which cupping might not be employed with advantage.

I have seen a great number of infant-children labouring under genuine pleuritis. Many of them have died, and those which have recovered were bled profusely. In the beginning of this winter, from a child of two years I took ten ounces of blood within forty-eight hours. The child was bled thrice, and would not, I believe, have recovered without the third bleeding. With children ill of pulmonary complaints, of whatever nature, there is certainly no time to lose; and how inadequate are the inert and trifling

trilling medicines commonly employed, or at least recommended, the event too often shows. Some of these little patients, however, have lingered in danger of suffocation every moment from the mucus, which they never expectorate, with purple lips, and every mark of interrupted pulmonary circulation, for a week or longer. These cases no person can mistake; and cupping has appeared the best method of bleeding. Leeches are somewhat uncertain, and besides scarcely ever within the purchase of the poor, and are never supplied by Dispensaries. Blisters have been employed, of course; but in several instances they have been succeeded by large and very unmanageable ulcerations, sometimes of such appearance, that it has been necessary to lay aside the proper treatment of the complaint, and have recourse to bark.

There are cases of pulmonary disease, sufficiently frequent, and yet to which the practitioners of this island do not appear to have attended enough, I mean in their writings; for I cannot suppose that many important circumstances in the practice of physic escape us here, to be detected in Germany or in France. Yet it is often in the writings only of the physicians of these countries that we find those remarks in detail, to which our own experience is perhaps fully adequate, but which we are content merely to have acquired for our individual instruction.

It is to the valuable practical work of *Stoll* that we are indebted for some excellent remarks on an affection apparently pleuritic, to which my attention probably would not have been called, but from some particular difficulties which attended two cases under my care about the beginning of September 1803, at which time I read them. Since that time, I have seen several cases of the same kind, and have therefore inquired a little into the history of the complaint. It is a severe pectoral disorder: it belongs to rheumatism: it is called by *Stoll* *Pleuritis Rheumatica*; while he has given the name of *Spuria* to another similar affection attended with bilious symptoms. It is perhaps better named *Pleurodyne Rheumatica*.

This disease is certainly a rheumatic affection, (*Rheumatica inflammatio*, *Stoll*), occupying probably all the moving fibres concerned in respiration, just as we suppose that they are all affected with *spasm* in *asthma*. It has been remarked by *Hoffman*, who faithfully describes the symptoms, (with a curious piece of pathology), and terms it 'periculi expers,' and 'nihil aliud quam rheumatismi species, familiaris iis qui catarrhis doloribus rheumaticis et arthriticis obnoxii sunt.'

I am satisfied that *Sydenham* has noticed this complaint, and had distinguished it from *pleuritis*. An uncommonly mild autumn (says this accurate observer) was succeeded by sudden cold

weather towards the end of the month of October 1675. An epidemic fever had recently prevailed, of which a cough had been a common symptom. Those who had suffered by this fever were chiefly the subjects of the rheumatic pleurodyne, which Sydenham correctly describes, without giving it a name. It began with a pain in the head, the back, and some of the limbs; and though the pungent pain in the side, the difficulty of breathing, the colour of the blood drawn, and the rest of the symptoms, which are usual in pleurisy, seemed to indicate that this was an essential pleurisy; nevertheless 'ab illa methodo medendi, quæ veræ pleuritidi conveniebat, abhorrebat admodum.' This is an addition to the known character of Sydenham for accurate observation, which I did not think it right to omit or to abbreviate.

Still the disease was not much noticed. Boerhaave describes it indeed in his 878th aphorism; and Van Swieten wishes to show that it was known to Galen. Dr Cullen mentions it in his *Synopsis* as a variety of rheumatism, but says nothing of it in the *First Lines*. It has been also noticed by Dr Home in the *Clinical Experiments*, (whose observations may still be consulted with much advantage); and by Dr Darwin in the *Zoonomia*. But it is to Stoll that we owe the able comparison of its symptoms with those of true *pleuritis*, and an accurate diagnosis.* Notwithstanding all which, I am satisfied that the complaint is very often treated, without being known.

In the first case I met with, the patient was twice bled, on the supposition of *pleuritis vera*, so very violent were the symptoms. She had been my patient for rheumatism, which had confined her to bed for a week. I learned afterwards that all the pains of the limbs had ceased in the course of one night; and without having left the apartment, she was attacked apparently with pneumonic inflammation, but really with the rheumatic pleurodyne. Her cure was accomplished by the warm bath, opium, and calomel, blisters, and the ordinary treatment of rheumatism. There is at present under my care a robust man, to whom I was called, with the most severe and obstinate case of rheumatism I have ever seen, more than a month ago. He has experienced the same recession of his pains, and has only been relieved from pulmonary symptoms of the utmost severity by similar treatment. He is not yet well, and the slightest exposure to cold threatens to bring back his complaints in all their intensity.

There is one remark of Stoll which has been always applicable in my cases, and which may be easily remembered: '*Præcedebant plerumque artuum, sive inferiorum sive superiorum, dolores lacerantes rheumatici.*'

The.

The practice of Dr Darwin has appeared to me to answer better than that of Stoll;—in particular, the utility of ether and opium. But of this rheumatism affecting the organs of *respiration*, we may have the same gradations and modifications, of acute and chronic, as when other parts are attacked; and this, of course, will create corresponding variety in the treatment.

Under what name may the more chronic pectoral complaints, especially those of people advanced in life, be most conveniently arranged? Neither the terms of *Peripneumonia*, nor cough with dyspnoea, have appeared to me sufficiently discriminative, or even applicable. These complaints are abundantly familiar. There is cough of variable violence, with expectoration of thick mucus, with rather a sense of weight than of pain in the chest, and occasionally a violent fluttering or pulsation at the *scrobiculus cordis*. Dyspnoea is the chief symptom; the tongue is generally foul; the pulse small and frequent, sometimes irregular or intermittent, seldom preternaturally slow; the urine universally high-coloured, and commonly turbid, even before it cools. In the greater number of cases there is no tumid or livid appearance of the countenance. With a pectoral complaint of this kind children are sometimes affected, and women I think quite as often as men.

After a few winters, such affections often prove fatal. In some cases the patients are completely worn out, and die exhausted: in others, their complaints terminate in hydrothorax. This last event is much more common than has been supposed. I have met with so great a number of cases of it, that I am disposed to include it always among the sources of danger in protracted pulmonary ailments, especially when the dropsical predisposition exists. But notwithstanding the dangerous tendency of hydrothorax, from whatever cause it may arise, I will venture to say that, in many instances, patients have recovered from it by the aid of medicine, more easily than we usually find them to do from the less suspected pulmonary obstructions which precede and produce it. Dr Cullen's remark, that hydrothorax is rarely cured, or even palliated, must be understood to apply only to those cases in which there is some formidable and permanent obstruction, which interferes with the pulmonary circulation, and which is out of the reach of medicine. In any other sense the remark is not extensively applicable.

Congestion, arising from any cause, often produces hydrothorax: and such dropsy is not necessarily incurable: it is often relieved, is often permanently removed. In one case medicine has been four times efficacious, with the interval of several months. The patient had been supported by pillows in an arm-chair for many days, unable to indulge for a moment in a posture approach-

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ing the horizontal, yet was so far restored as to sleep soundly in her bed for several weeks. During the last summer, dropsy of the chest took place under circumstances which might be expected to produce it more frequently, viz. in an advanced stage of consumption. It was one of the few cases in which the unequivocal diagnostic of *Auenbrügger* was afforded. On this account the case was seen by several medical practitioners. The water was fairly removed by *elaterium*, (for the combination of *mercury with squill and digitalis*, which I usually employ, was quite unavailing here.) The radical disease, which seemed to have been suspended, (or which was lost in the more urgent symptoms of hydrothorax), assumed again its unequivocal aspect; and the patient died about two months ago entirely extenuated.

X.

Historical and Critical Analysis of the Functions of the Skin.
By George Kellie, M. D. Leith.

THERE is not perhaps in the whole animal economy an organ, whose functions deserve more the attention of the physician, than the skin.

How extended this organ is, how often its functions are deranged in disease, how many diseases have been attributed to these derangements, is well known.

Yet the physiology of the skin is but little understood; its functions are not well ascertained; nor have the nature and value of any one of these been accurately explained. We know that the skin is the general covering of the body, the seat of the sense of touch, and the organ of perspiration. But the value of this function is not yet fixed; the laws to which it is subjected are not determined; and of the nature of the matter perspired we are still very ignorant.

By the skin, we are also supposed to maintain certain relations with the surrounding element. Is the skin also an inhaling organ? Is any thing absorbed from without? and what? Is water imbibed, or air? Is the atmosphere decomposed at the surface, as in the lungs, by respiration? Is water formed, and carbonic acid, by the combustion of hydrocarbon, secreted by the skin?

These are questions, without doubt, worthy of being solved, but still disputed; and the materials yet before us are, I fear, insufficient to enable us to lay any sure foundation.

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The way, however, is laid open. Experiments must be varied, and repeated on a larger scale than hitherto; every product must be examined by the nicer chemical tests, and nature kept to the torture till forced to declare the truth.

‘Non solum copia major experimentorum quærenda est, et procuranda, atque etiam alterius generis, quam adhuc factum est; sed etiam methodus planè alia, et ordo, et processus continuandæ et provehendæ experientiæ, introducenda. Vaga enim experientia, et se tantum sequens, mera palpatio est; at cum experientia lege certa procedet, seriatim et continenter, de scientiis aliquid melius sperari poterit.’ *

Passing over the sense of touch, all the other doctrines connected with the present investigation may be conveniently arranged under the functions of *Perspiration*, and of *Inhalation* or *Cutaneous Absorption*; and in this order it is proposed to consider them.

I. PERSPIRATION.

The cuticular discharge very early occupied the attention of physicians. It was known to the ancients, nor had its influence on health escaped their observation. Obstructed perspiration, as we learn from Celsus, was considered by Aesclepiades as the cause of diseases.† And this pathology, under various modifications, has descended even to our own times, and has, in no small degree, influenced the practice of physicians.

We find little information, however, concerning this function before the 17th century, about the beginning of which the perspiration became the subject of the most patient research, and of the most extensive experiments perhaps ever undertaken. But the method of experiment, and of chaste induction, was then but imperfectly understood. Hence Sanctorius, who, with admirable industry, dedicated thirty years to his experiments, published his aphorisms only, many of which are the mere speculations of the author, and cannot now be regarded as strict conclusions from the suppressed experiments.

Sanctorius was followed by a long list of illustrious emulators, who laboured in the same field. Dodart, Keil, Rye, Robinson, John de Gorter, Linnings, Hartman, and others, prosecuted these experiments. Even a British Sovereign (Charles II.), amidst the bustle of a gay and profligate court, found amusement in repeating them.

* Bacon, Nov. Organ.

† Cels. lib. 1. cap. 1.

them. These were conducted by weighing the body, the ingesta and egesta; so that the quantity of perspiration was ascertained by the loss of weight.

From such experiments, Sanctorius, in the climate of Venice, estimated the perspiration so high as 5 lb. in the twenty-four hours. Linnings, from a series of experiments, continued during twelve months, in South Carolina, fixed the average amount at 60.10 oz.; Rye at 56½ oz.; Robinsou valued it at 46 oz.; Gorter at 49 oz.; and Keil at 31 oz.

Considering the nature of the experiments, and allowing for the difference of climate, and of the ages and habitudes of the individuals, greater conformity in the results could not perhaps be expected. Haller, after comparing a number of these observations, concludes, that the average amount of the daily perspiration may be in the warmer climates about 60 oz. and in the more temperate 56, 46, and 30 ounces. *

It will, however, be readily perceived, that these calculations give not the measure of the perspiration alone, but of the cutaneous and pulmonary discharges together. To separate these, to fix the quantity of each, still remained an important problem, the solution of which has only been attempted of late years.

Mr Abernethy having, in six hours, collected from his hand and wrist, inclosed in a glass jar, about 3 iij of the perspired fluid, endeavoured to ascertain the quantity of the daily exhalation, by measuring the surface of his body, and by finding the proportion which the hand and wrist, subjected to the experiment, bore to the whole. The surface, from which 3 iij of the perspired matter had been collected, he estimated at one twenty-fifth part of the whole; so that if the perspiration is at all times and in every part equal, the loss which the body sustains in one day would be about 2½ lb.† But we can place no great confidence in calculations of this kind, which rest on postulates which are very doubtful, and on which, indeed, Mr Cruickshank estimated the daily perspiration at 7 lb.‡

Much more accurate is the ingenious method invented by Lavoisier and Seguin. In their experiments, the whole body was inclosed in a silk bag, varnished with elastic gum, impenetrable by air or moisture, having a small opening carefully cemented round the mouth, through which the person might breathe; so that whatever came from the lungs escaped, while the whole of the cutaneous discharge was confined within the bag.

By

* *Elementa Physiolog. Corp. Human.* tom. v. p. 68.

† *Surgical and Physiological Essays.*

‡ *Cruickshank on the Insensible Perspiration.*

By weighing the body, therefore, before putting on this dress, and immediately after leaving it, the total loss by the pulmonary and cutaneous discharges was ascertained; the amount of the loss by the lungs was known, by weighing the subject of experiment on first entering the bag, and again at the end of the experiment, immediately before coming out; which, subtracted from the total loss, gave the value of the cutaneous perspiration.

From repeated trials in this way, Seguin and Lavoisier found the mean loss, by the cutaneous and pulmonary exhalations, to be about 18 grains in the minute, or 2 lb. 13 oz. in twenty-four hours. The pulmonary discharge amounted to 15 oz.; so that there remains 1 lb. 14 oz. as the mean quantity of daily perspiration.*

From this enumeration of the various experiments and calculations which have been made, we may conclude, that the diurnal loss by perspiration is considerable; and I think we cannot far err in fixing its average amount at 30 oz. But this must necessarily vary in different individuals, and in the same individual at different times, according to the quantity and nature of the ingesta, the vigour of the circulation, the temperature, and other external relations.

Having thus examined what has been done with a view to determine the quantity of perspiration, I proceed now to inquire, what knowledge we have attained of the composition and properties of this discharge.

The first inquirers seem to have been much delighted, when they observed the perspiration arising in the form of vapour from the heated body, or ascending like smoke from their shadows.

As the matter of perspiration escapes from the surface insensibly, it is difficult to collect it in sufficient quantity for chemical examination; hence our knowledge of the nature and composition of this secretion is still very imperfect. To Tachenius, who, by means of oiled sheets, collected a few ounces in the fluid state, it seemed chiefly water. But Lister, who also examined the perspired fluid, thought it had a saltish or urinous taste.†

The greater part of the matter of perspiration is doubtless water, but it certainly contains other impregnations, the nature of which is not, however, well ascertained. It is said to be frequently acid, and to change the blue vegetable colours to red. Berthollet indeed thought he had detected the presence of the phosphoric

* *Memoires de l'Académie des Sciences*, 1790, page 610.

† *Haller. Elementa Physiologiæ*, tom. v.

phosphoric acid; but Fourcroy remarks, if this acid were constantly secreted, it must accumulate on the skin, as it is too fixed to be volatilized with the aqueous vapour of perspiration. *

Mr Abernethy having procured § iij of the perspired fluid, evaporated one half, and there remained on the glass a small residuum, which had a very slight taste of salt; the other half was suffered to stand many days, in which time no change appeared. It did not alter the colour of vegetable blues; no coagulation or precipitation of animal matter was produced by the muriatic acid; neither was any change produced by the addition of pure alkali. It appeared, therefore, to Mr Abernethy, 'that the water of perspiration contains little of any thing, except a very small portion of salt.' † But from a single experiment on so very small a quantity, and where the more delicate chemical tests were not employed, no certain information can be obtained. From the strong odour of the perspiration when profuse, and from the tinge it communicates to the linen, there is reason to suppose it contains a particular animal matter. In the perspiration of the horse, an animal substance, of the nature of urea, has been detected by the distinguished chemists Vauquelin and Fourcroy, who have also discovered, that the phosphate of lime, in considerable quantity, is left by the evaporation of the perspired matter on the skin of the same animal. ‡

It appears, then, upon the whole, that the qualities of the fluid matter of perspiration are not well known. It consists chiefly of water, but probably contains a particular animal matter: the presence of saline substances has been ascertained, but their kind remains undetermined.

Besides the condensable vapour which is exhaled, it has been also alleged that gaseous fluids are perspired by the skin.

For my own part, I must confess, that after having examined the great number of experiments made by different philosophers, and the objections and counter experiments of others, I have not been able completely to satisfy myself.

The Count de Milly was the first who called the attention of philosophers to this subject. He had often remarked the accumulation of small air bubbles on the surface of his body when immersed in the warm bath. At length, by means of a funnel and inverted glass jar, he collected, in a few hours, half a French pint of

* *Système des Connaissances Chimiques*, tome ix.

† *Surgical and Physiological Essays*.

‡ *Système des Connaissances Chimiques*, tome ix.

of this gas, which was afterwards examined by the celebrated Lavoisier. It was incapable of supporting combustion; precipitated lime water, and suffered no change from the admixture of nitrous gas. As it differed, therefore, from atmospheric air, and contained a large quantity of carbonic acid gas, no doubt was entertained of its origin. *

Dr Ingenhouz, to whom we are so much indebted for many valuable experiments on vegetables, was not able to collect this gas so abundantly as the Count de Milly. He procured it, however, in quantity sufficient to convince himself that it differed essentially from common air. It contained little or no carbonic acid, and appeared to be chiefly azotic gas. It did not escape the observation of Dr Ingenhouz, that much of the air which appears on the surface of the body, when immersed under water, was to be attributed to atmospheric air adhering to the skin. This, therefore, he took care to separate: but still the air continued to escape from the surface in an infinite number of small bubbles; and these he always found more vitiated than the former, which confirmed his belief that the gas was perspired from the skin.

‘ J’ai observé que l’air contenu dans les grosses bulles qui paroissent d’abord qu’on plonge le bras sous l’eau, est d’une qualité moins mauvaise que celui qu’on obtient des petites bulles qui succèdent. ’ †

Mr Cruickshank too, when engaged in some experiments on the insensible perspiration, found that the air in which his hand had been for some time confined was vitiated; that a candle burned dimly in it; and that when washed with lime water a precipitation took place. ‡

But Dr Priestley denies that any gas is perspired by the skin. He repeated the experiments of Dr Ingenhouz, and never could observe the appearance of any gas arising from his body when he employed boiled rain water, from which the air had been completely expelled, and detached the adhering bubbles from his arm.

The air obtained by Dr Ingenhouz, he observes, ‘ was just that mixture of fixed air, and partially phlogisticated air, that pump-water, which he recommends for the purpose, generally abounds with. ’ ||

Such

* Histoire de l’Académie Royale des Sciences et Belles Lettres de Berlin, an 1777, page 35.

† Experiences sur les Vegetaux, tome 1. page 152.

‡ Experiments on the Insensible Perspiration, by W. Cruickshank.

|| Experiments and Observations, vol. v. p. 103.

Such also was the result of Mr Jurine's experience, who, after remaining in the bath at different temperatures, from 18° to 30° Reaumur, for hours together, never could procure a single bubble of air from his skin. *

There is reason, therefore, to believe that Milly and Ingenhouz had been deceived, and that the gas which seemed to escape from the skin in their experiments, was no other than the air of the water; an appearance which may be exhibited by plunging almost any other substance, as a piece of glass or metal, under water.

Mr Cruickshank's experiments, however, seemed to prove that air, which has been confined for some time in contact with the skin, becomes changed; though Dr Priestley again maintained; that the perspirable matter has no such effect upon the air, but leaves it as wholesome as ever.

But a very extensive set of experiments performed by Mr Jurine of Geneva, and published in the Memoirs of the Royal Society of Medicine, would seem to confirm the observation of Mr Cruickshank. For, although Mr Jurine could not collect any air from his skin when immersed in the warm bath, he always found the air confined about the skin much vitiated.

Jurine fixed well-dried bottles under his armpits, and round his waist, where, having remained an hour, they were accurately corked, and removed, that the contained air might be examined by the usual tests. In these experiments he always employed the mercurial trough. This air was found, on different occasions, to contain $\frac{7}{100}$ $\frac{7\frac{1}{2}}{100}$ $\frac{6}{100}$ $\frac{4\frac{1}{2}}{100}$ of carbonic acid gas.

He next enclosed his arm in a glass cylinder, containing 685 cubic inches of air. One extremity of this vessel closely embraced his arm, round which it was cemented. To the other extremity was fitted a bent tube, which, during the experiment, was plunged under water in the pneumatic trough.

After two hours, the air of the cylinder was found to contain $\frac{8}{100}$ of carbonic acid gas. In another experiment, the same quantity was obtained after one hour; but the proportion of carbonic acid gas was not greater, at the end of the second, third, and fourth hour.

Lastly, Jurine, thus satisfied that carbonic acid gas was formed by the skin when in contact with the air of the atmosphere, imagined he should find the same gas under the bed-clothes which confine the air round the body during sleep; and in different experiments on the beds of different individuals, he accordingly found

found that this air contained $\frac{6}{100}$ $\frac{4}{100}$ $\frac{7}{100}$ $\frac{1}{100}$ of carbonic acid gas. *

Seguin, indeed, has objected to the conclusions of Mr Jurine, that the carbonic acid found so abundantly in these experiments, was the product of respiration, which from its superior gravity falling vertically downwards, and forming an atmosphere round the body, displaced the air in the open vessels under his armpits. † But I can hardly conceive the possibility of this. The air of expiration must be projected to a considerable distance beyond the armpits; and if the carbonic acid gas from the lungs is really disposed to fall downwards so immediately, it could not surely be accumulated in such quantity under the armpits; for the proportion of this gas in some of Mr Jurine's experiments was nearly equal to that contained in the air of expiration at its issue from the lungs.

Besides, the objection of Mr Seguin will not apply to the $\frac{1}{100}$ parts of carbonic acid gas discovered in the cylinder in which the arm had been confined; for in this experiment all communication with the atmosphere was interrupted. It is true, indeed, that the quantity of carbonic acid did not increase in proportion to the duration of the experiment; a difficulty which Jurine himself remarked, and Seguin has insisted on.

It is to be regretted that Jurine had not employed some more accurate test than the nitrous gas, for ascertaining the proportion of oxygen; and we know, from his experiments and observations on the air of respiration, how little he understood even the language of his eudiometer with nitrous gas. Perhaps the oxygen might have been found diminished, in proportion to the formation of carbonic acid, which would in some measure have explained his experiment.

Gattoni, indeed, in a paper inserted in the same volume ‡, has given an account of some experiments, which do not perfectly agree with those of Mr Jurine. But Gattoni, who operated with the eudiometer of Volta, does not appear to have employed lime-water, the proper test of carbonic acid. Nor do his experiments always agree. He never discovered, we are informed, any remarkable difference between the air confined near the skin, and that of the atmosphere; and yet a difference was frequently observed, which he is willing to attribute to the ignorance or inattention of the subjects of experiment. And in one class of experiments made by enclosing the lower extremities and loins of some beggar boys, hired for the purpose, in large leather bags, where

VOL. I. NO. 2.

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the

* *Memoires de la Societe de Medecine*, tom. X.

† *Histoire de la Societe de Medecine*, tom. X.

‡ *Ibid.*

the air was found considerably vitiated, Gattoni roundly accused his ragged friends of gross misbehaviour, though the poor lads denied the charge.

After all, I doubt much if we can draw any very important conclusion from the various experiments I have now been reviewing. The air immediately surrounding the body, and in contact with the skin, appears to contain a much larger proportion of carbonic acid gas than is usually found in the atmosphere. So far, the experiments in general seem to agree; and those of Mr Abernethy, I think, confirm the observation.

Mr Abernethy's experiments were performed, by introducing his hand and wrist under a glass jar inverted in the mercurial trough.

1st, The jar being filled with quicksilver, he collected, in the space of sixteen hours, one half ounce measure of air, which had escaped in small bubbles, from every point of the surface of the immersed hand. Two thirds of this gas were absorbed by lime-water; the remainder suffered no diminution by the mixture of nitrous gas.

2d, The experiment being repeated under water, a small quantity of azotic gas only was obtained, the carbonic acid having been, in the opinion of Mr Abernethy, absorbed by the water.

3d, The jar containing seven ounces of atmospheric air. After five hours exposure of the hand, the air in the jar was diminished about half an ounce. Of the remaining air, one ounce was absorbed by lime-water, with precipitation of the lime. By the test of nitrous gas, the air was found to contain nearly one sixth part less of oxygenous gas than it did before the experiment.

4th, The jar containing seven ounces of azotic gas. At the end of two hours, rather more than one ounce measure of carbonic acid gas was produced.

Similar experiments were made with hydrogenous, nitrous, and oxygenous gases. And in every case the quantity of carbonic acid gas obtained was nearly the same. *

'Experiment shows then,' says Mr Abernethy, 'that carbonic gas is *perspired* from the vessels; for into whatever air the hand be immersed, the quantity of carbonic gas given out will be nearly the same.' †

But if carbonic acid gas were really thus perspired from the vessels of the skin, it should be easily collected, not only under every kind of gas, but under water, as in the warm bath; which is contrary

* Surgical and Physiological Essays.

† An Essay on the Functions of the Skin, p. 121.

trary to the most accurate experiments, and indeed to the experience of Mr Abernethy himself. Besides, there is reason to fear that Mr Abernethy had not been sufficiently guarded against the errors to which such experiments are liable. It is true, he was careful in agitating and washing his hand beneath the quicksilver in the trough, before introducing it within the jar, and also in withdrawing it, that as little air as possible might adhere to the hand; and be carried into or abstracted from the jar. Still, however, in the way these experiments were conducted, it must have been very difficult altogether to avoid this source of error: for what Mr Abernethy often gives us as the result of a single experiment, must indeed be rather regarded as the accumulated event of several experiments. Thus, in the first I have mentioned, where half an ounce of air is said to have been collected from the hand and wrist in sixteen hours, we may well suppose that the hand had been many times introduced and withdrawn, and this at longer or shorter intervals of repose. Indeed, this appears to have been actually the case, from the account given by the author of the experiment. 'After an hour had elapsed,' Mr Abernethy observes, 'I withdrew my hand. The bubble of air which now appeared on the top of the quicksilver, was, I suppose, in bulk equal to one scruple of water. In sixteen hours, I collected an half ounce measure of air,' &c. And in other experiments, of nine, and of five hours duration, the case must have been the same. Now, when we reflect on this circumstance, and recollect also, that in all Mr Abernethy's experiments in which carbonic acid gas was obtained, there was always a portion of the air originally contained in the glass jar missing at the end of the experiment; and this uniformly, whatever kind of gas was the subject of trial, we cannot help suspecting, that the one might be introduced, and the other removed with the hand.

If we do not think ourselves authorised to conclude with Mr Abernethy, that carbonic acid gas is directly perspired from the vessels of the skin, his experiments at least appear to confirm the very general inference I have drawn from those of Mr Jurine and others, that the air in immediate contact with the skin is much vitiated, and contains a large proportion of carbonic acid gas.

I have already, in a former part of this paper, given my reasons why I do not think Séguin's account of this matter satisfactory. What then is the source of this gas, so abundant at the surface of the body, at least so frequently obtained in the different experiments of different philosophers? Is the ambient air decomposed by the stagnant matter of perspiration, and other fordes accumulated on the skin? Or shall we adopt the hypothesis of some mo-

dern physiologists, and conclude, that the functions of the skin and lungs are similar?

' Il n'est pas vrai,' says Fourcroy, ' Il n'est pas vrai qu'il sort par la peau, comme l'ont voulu quelques modernes, des fluides elastiques, et notamment du gas acide carbonique; mais il y a lieu de croire qu'à la surface la plus proche de la peau, que dans ses cavités immediates il se degage, et il brule une portion de carbone; peut-être même une certaine quantité d'hydrogène carboné s'exhale-t-il par ses pores, et eprouve-t-il une combustion lente.' *

In a late number of the *Annales de Chimie*, there is an account of some observations made by Citizen Trouffet on the aëri-form perspiration. Trouffet's experiments appear to have been performed after the manner of the Count de Milly, by collecting the air which escaped in bubbles from the surface of the body while immersed in the bath, and are consequently liable to the same objections. Nor, even in this way, could Trouffet procure air from every individual. He could not collect any from his own body; and with several others he was equally unsuccessful. When, however, air was procured, it appeared to be perfectly pure nitrogen, without any mixture of carbonic acid gas †.

The last experimental philosopher, who has paid particular attention to this subject, is Spallanzani. The detail of his experiments has not been published; but the results are preserved in a letter to Senebier, introductory to his *Memoirs on Respiration*. He appears to have been completely satisfied that air in contact with the skin is changed exactly in the same manner as by respiration. When atmospheric air was employed, oxygen disappeared, and carbonic acid gas was produced; but he is of opinion, that the oxygen of the atmosphere had no share in the production of the carbonic acid gas, because it was equally great when the animal was confined in gases containing no oxygen; and he therefore concludes, that the carbonic acid gas was exhaled, and the oxygen absorbed. He also remarked, that amphibious animals lived longer in the open air when they were deprived of their lungs, than when their lungs were entire, and they were confined in a mephitic gas, or had their skins covered with spirit-varnish.

I have now briefly stated the principal facts and opinions connected with this interesting subject; I have endeavoured to analyze, as it were, and to fix the value of the different experiments. This I have done with freedom, and I trust with candour and impartiality; but I have not found that any important conclusions can

* *Système des Connaissances Chimiques*, tom. ix. p. 203.

† *Annales de Chimie*, xlv. 73.

can be drawn from them. The points in which the experiments agree, are too few to enable us to establish any theory or doctrine. Future experiments may prove the fallacy, and detect the sources of error of those we now possess; or discover to us the yet hidden secret of nature. We have on this, as on many other occasions, to lament the untimely death of the amiable and industrious Lavoisier.

*' Quis desiderio sit pudor, aut modus
Tum cari capitis?'*

——— *cui Pudor, et Justitiæ soror
Incorrupta Fides, nudaque Veritas,
Quando ullum invenient parem?'*

2. INHALATION.

It had long been received as an established truth, that the skin was also an inhaling or absorbing organ; that though the loss by perspiration commonly greatly exceeded what the system gained by absorption, yet sometimes, according to the varying circumstances of external relations and conditions of the body itself, the inhalation balanced, or even surpassed, the exhalation. But of late this doctrine of inhalation has been called in question, and, in the opinion of many, has been completely overthrown. It has been said, that this absorption neither does nor can take place on the outside of the cuticle; that in every case of apparent absorption, the epidermis had been injured, or that the matter absorbed had been mechanically forced through it, and brought into immediate contact with the skin.

Haller had asserted, in his *Elementa Physiologiæ*, on the authority of Dehaen, that the body acquired an increase of weight in the warm bath; and this augmentation of weight was esteemed an *experimentum crucis* in favour of cutaneous absorption.

' Denique vapor aquæ calidæ in manum resorbetur, et homini in balneo constituto cutis tumet et rubet, corpus pondere augetur, sitis sedatur, et omnia signa eduntur aquæ resorptæ, et sanguini admittæ.' *

Experiments, however, have since been made with every necessary care, which would seem to contradict the position, and to prove, that the body acquires no additional weight in the warm bath.

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Seguin,

* *Element. Physiolog. Corp. Human. tom. v. p. 88. edit. Lusannæ, 1769.*

Seguin, from a great many experiments of this description, concludes that there is no inhalation; because the body, so far from gaining, always lost some part of its weight during immersion, although much less than in the air, in equal times. Thus, in a bath heated from 10° to 12° , Reaumur, he tells us, the loss of weight was to that sustained during the same time in air as 6.5 to 17; at the temperatures from 15° to 18° , as 7.5 to 21.7; and from 26° to 28° , as 13 to 23.*

In other experiments, again, as in those of Drs Gerard and Currie, there was no increase of weight; but neither was the body observed to have suffered any loss during immersion in the warm bath.

Now, during these experiments, the body was doubtless wasting, by the pulmonary and cutaneous discharges; and yet the weight of the body either continued unchanged, or, where a loss of weight was observed, this was constantly less, greatly less, than is experienced during the same interval in air. And we might be inclined to infer, from a truth so general, and so well ascertained, an argument in favour of absorption.

It might be argued, that the loss of weight amounts to little or nothing; because, during immersion, the body acquires more by inhalation than it does or can do in the air; that the loss by the pulmonary and cutaneous discharges is counterbalanced, or nearly counterbalanced, by the increased absorption.

Those, however, who deny absorption, will not allow us the advantage of this argument. They tell us, that the exhalation by the skin and lungs is diminished, which sufficiently explains why the body loses less in the warm bath than in air. But, that the accustomed discharges are suppressed or diminished in the warm or tepid bath, is, I apprehend, far from being proved; and till this proposition is made good, the argument against cutaneous inhalation cannot be securely maintained.

One of Dr Currie's cases merits farther consideration. No experiment, I think, could turn out more unfavourably for an opponent of cutaneous absorption, than the case of Dysphagia, published by Dr Currie. Mr M——, it is true, gained no weight while in the warm bath; but the loss continually going on in the air, was, as in other trials, suspended during the immersions. Besides, 'he always expressed great comfort from the bath, with abatement of thirst;' and 'subsequent to the daily use of it, the urine flowed more plentifully, and became less pungent.' An observation precisely similar is made by Mr Cruickshank. 'A patient

* La Médecine Eclairée, &c. tom. 3..

patient of mine,' says Mr Cruickshank, 'with a stricture of the œsophagus, received nothing, either solid or liquid, into the stomach for two months; he was exceedingly thirsty, and complained of making no water. I ordered him the warm bath for an hour, evening and morning, for a month; his thirst vanished, and he made water in the same manner as when he used to drink by the mouth.'*

But to return to the case of Mr M——. Dr Currie himself remarks, 'that the discharge by urine alone exceeded much in weight the waste of his whole body; and it cannot be doubted,' he adds, 'that the discharge by stool and perspiration exceeded the weight of the clysters.'—'Thus it appears,' continues Dr Currie, 'that the egesta exceeded the ingesta in a proportion much greater than the waste of his body will explain.'—'How,' he asks, 'is this accounted for, unless by cutaneous absorption?'

That the excess of these discharges above the ingesta and total waste can be accounted for by absorption only, was indeed an irresistible conclusion. Still, however, cutaneous absorption is denied; and, when forced to confess that there are cases where the egesta exceed the ingesta in a much greater proportion than the waste of the body will explain, and which can only be accounted for by absorption, they refuse this function to the skin, and bestow it most liberally, and, in so far as I know, most gratuitously, on the lungs. I am not entitled, in return, to deny the reality of pulmonary absorption; but I may surely be allowed to urge, that there is no proof that the only inhaling organ is the lungs; that there is none against the possibility of cutaneous absorption.

Is it not, on the other hand, proved, by the experiments of Seguin and Lavoisier, that the exhalation greatly exceeds the absorption by the pulmonary system? And if this is always the case, we cannot explain, by the pulmonary inhalation alone, why the egesta should, in some cases, exceed the ingesta in a much greater proportion than the waste of the body will account for.

I now proceed to examine another class of experiments, much insisted on by those who deny cutaneous absorption; I mean those experiments performed by immersing a part of the body in solutions of active drugs, the absorption of which should be indicated by their usual effects on the system.

Seguin made numerous experiments of this kind, with solutions of muriate of mercury, on syphilitic patients. And we are informed, that in cases where the epidermis was perfectly sound, neither

* Cruickshank on the Absorbents.

the known effects of mercury on the body, nor any amelioration of the venereal symptoms, was ever observed.

He also immersed his own arm in a solution of two drachms of the mercurial muriate in ten pounds of water. At the temperatures of 10° and of 28° , Reaumur, no part of the salt was missing at the end of the experiment; but when the bath was at 18° degrees of the same scale, there was a loss of one or two grains of the muriate in the hour, though the quantity of fluid was not diminished.

The explanation given by Seguin of this unexpected result, is curiously ingenious, but embarrassed, and inconsistent.

At the temperature of 12° , he observes, the exhalants are in a state of contraction, and their orifices nearly closed. When the heat again is raised to 26° , the exhalation is so rapid, that nothing can enter the vessels from without; but at 18° of temperature, the orifices of the exhalants are sufficiently relaxed, and the exhalation at the same time so conveniently languid, that the solution rests quietly in contact with the matter of perspiration in the mouths of the exhalants, where it is somehow or other decomposed, a part of the muriate leaving the water of solution, and combining with the perspirable matter, with which it is carried into the system.

‘Ainsi une dissolution saline à dix ou à vingt huit degrés étant mise en contact avec la peau humaine bien saine, il n’y a point d’absorption, ni de la part de l’eau, ni de la part de sel; la même dissolution à dix huit degrés mise en contact avec la peau qui ne transpire point dans l’eau à cette température, permet à l’humour de la transpiration de partager le sel de la dissolution jusqu’à l’équilibre de saturation, et de la porter dans la circulation.’*

Carried into the circulation by the exhalants! In this manner does Seguin interpret his experiments. Is it not a plain acknowledgment of the reality of inhalation? But if, in one case, substances may thus be carried into the circulation, why not in many others?

I have thus reviewed the principal experiments which are thought to militate against the doctrine of cutaneous absorption. The criticisms I have hazarded appear to me well-founded; and I cannot help thinking, that the facts which have been proposed as difficulties, prove more for the old doctrine than against it.

Surely if the weight continues undiminished, in circumstances where the body is continually losing, we may infer, that something has been gained by absorption. And where the egesta exceed

* La Médecine Eclairée, tome 3. p. 238.

ceed the ingesta in a proportion much greater than the waste of the body will explain, there absorption must have been going on.

The case of Mr M——, published by Dr Currie, is not singular. The writings of physicians abound in similar examples. They had often occurred to that excellent clinical practitioner, De Haen, who was therefore persuaded that water was imbibed. 'Haud ita mirabimur,' he observes, 'hominem 150 librarum, paucos intra dies, libris 50, et pluribus graviores fieri, et nova paracentesi totidem aquæ libras emittere, licet toto eo tempore vix liquidi quidquam hauserit.'*

The illustrious Haller, too, with his usual industry, has collected a great many observations of the same kind. 'Olim Petrus Castellus Mascardum nominat, qui 10plo plus per tres annos minxit, quam bibeat. Duplo plus reddebat quam biberat, et turbidam aquam alius, et triplo iterum alius. Apud Mathiam de Gradibus historia fœminæ legitur, quæ cum cibos omnes revomeret, et plus revomeret, quam sumebat ciborum, et bis per septimanam venam fecaret, sanguinisque emitteret uncias 7. 8. totis 6 aut 8 mensibus, tamen supervixit. Duodecim pintæ quotidie per lotium redditæ leguntur, et quatuor amphoræ. Homo ex pectore laborans in 7 horis minxit libras 7, et in alio paroxysmo libras 10, deinde 3, 4, diebus continuis ad libras 70. Virgo nobilis quotidie 260 uncias urinæ edidit absque cibo et potu.

* Ex Gatinaria puella quotidie per 60 dies pocula minxit 16, qualia tria biberat, ut in eo tempore 1740 libris urina superaret, et super cibum potumque amiserit libras 1740, felici tamen eventu. Virgo 20 libras absque siti vel morbo per 60 dies amisit, &c. †

Again, when physicians were engaged in their extensive statical experiments, weighing themselves, their ingesta, and egesta, for months, nay for years together, they sometimes observed that, so far from losing, they had gained weight, especially during cold and moist weather. Thus, Rye, under a cold and humid atmosphere, gained thirteen ounces. Linnings, during two hours exposure to cold, acquired eight ounces and a half. The Abbé Fontana, after two hours exposure to a moist atmosphere, returned home some ounces heavier than he went out. De Gorter gained six ounces in one night; and, on other occasions, two ounces and four

* Ratio Medendi, pars iv. cap. iii.

† Haller. Physiol. Corp. Hum. tom. v. p. 90.—See also, Mr Ford's Case of Dropsy, Medical Communications, vol. ii.; and Transactions of College of Physicians, vol. ii. &c.

four ounces. These observations are confirmed also by the experience of Dr Francis Home, the late Professor of Materia Medica in this University. ' Having fatigued myself pretty much in the afternoon, I went to bed without supper, and was so hungry that I could not fall asleep for some time. Betwixt eleven at night and seven next morning I had gained two ounces.' *

Here then are examples of the body gaining considerably more than the *ingesta* will account for,—acquiring weight when neither food nor drink had been swallowed. And we have the concurring testimony of the most respectable writers supporting the same truth.

How can this increase of weight be accounted for, unless by absorption? In such experiments, the *loss of weight*, which cannot be accounted for by the sensible *egeſta*, is attributed to the *exhalation*; the *increased weight* sometimes observed, and which cannot be explained by the sensible *ingesta*, must, in like manner, be referred to the *inhalation*.

That the system may be affected by active medicines, introduced and absorbed by the skin, cannot be denied. And, were proofs still wanting to establish the doctrine of cutaneous absorption, this argument might be insisted on. It is true, that friction is commonly employed when we wish to introduce medicines by the skin, by which it is said the substance is mechanically forced through the cuticle, and brought into contact with the absorbents of the true skin. The system, however, may be affected without friction, for example, by wearing a mercurial plaster, and more certainly by mercurial fumigation; as practised by Lalouette and others.

But enough surely has been already said to establish the doctrine I have been maintaining, and to enable me to conclude, that *inhalation* is, no less than *exhalation*, a function of the skin.

What may be the limits of this function I am not able to determine. I know that Mr Abernethy entertained the opinion, that elastic fluids were also absorbed by the skin. But there is reason to think he had been deceived by appearances; and I have already pointed out one very probable source of error in his experiments.

An experimental investigation is still wanting to determine whether or not any change is effected on the air of the atmosphere

* Medical Facts and Experiments, page 250.

An instance is also mentioned by Dr Percival, of a horse-jockey, whose weight increased 30 ounces, although in the interval he had taken but a glass of wine.

sphere by the skin, or by any part of the perspirable matter. In the present state of our knowledge, it would be rash to give a too decisive opinion. ' Quid autem tam temerarium, tamque indignum sapientis gravitate atque constantia, quam aut falsum sentire, aut, quod non satis explore perceptum sit et cognitum, sine ulla dubitatione defendere.' *

XI.

THE INQUIRER. No. I.

Quæ sunt, quæ fuerint, quæ mox ventura, trahantur.

QUESTION. ' What are the comparative advantages of the different modes proposed for the treatment of Ulcerated Legs ? '

' Cum hæc per multa volumina, perque magnæ contentionis disputationes, à medicis sæpe tractata sint, atque tractentur, subjiciendum est, quæ proxima vero videri possint, neque addicta alterutri opinioni, neque ab utrâque nimium abhorrentia, sed media quodammodo inter diversas sententias.' *Celsus.*

ULCEERS on the legs form a very extensive and important class of diseases. The frequency of these complaints, and the pain and distress occasioned by them, make them often call for the surgeon's or physician's attention. The treatment of such cases is generally looked upon as an inferior branch of practice; an unpleasant and inglorious task, where much labour must be bestowed, and little honour gained. It is too often neglected in private and in hospital practice, or left to be negligently performed by unskilful hands. It ought, however, to be remembered, that more credit is due to the surgeon who saves one limb, than to him who amputates twenty; that dexterity in operating is only secondary in merit to skill in healing; and that an extensive cicatrix is a more honourable trophy than a well-healed stump, or a wooden leg. Different opinions have been entertained respecting the best mode of managing these troublesome diseases. In the present

present investigation, it is proposed to examine the comparative merits of these, and to deduce such practical conclusions as seem warranted by just reasoning and multiplied experience. To open a full and formal discussion of all the definitions, classifications, theories, and remedies, given by different authors, would at least be irregular and improper. But as, in matters of particular practice, our judgement is sometimes influenced by the personal abilities, by the experience, and by the known character and authority of the authors, it may be right here to mention, that the writers whose sentiments are principally held in view, are *Dr Underwood* * and *Mr Whately*, † in speaking of the advocates for the utility of EXERCISE; and *Mr Benjamin Bell* ‡ and *Mr Home*, || as the advisers of the opposite system, REST.

Towards the close of the 17th century, the study of surgery was revived as a scientific pursuit; and in the works of *Wiseman* and *Read* will be found the rudiments of the best practice in the treatment of ulcerated legs, which, with some modifications, fewer indeed than might have been expected, has continued to the present time. *Wiseman* and all the old surgeons considered ulcers as occasioned by acrid and corroding humours, and only to be cured by correcting the quality of the vitiated fluids, by the exhibition of internal as well as external remedies. Their practice consisted in frequent evacuations of the system, and in a strict regard to what go under the perverted name of *non-naturals*, viz. diet, air, exercise, &c. At the same time, they applied escharotics, or strong stimulants, to the surface of the sores, to prepare for the healing process, by an action which they called *deterasion* or *digestion*. With their strong local applications, (except they found that the diseased parts could be brought to resume their natural healthy action by more mild dressings), and with the use of rollers and the laced stocking, they found no greater obstacles in curing ulcers of the legs than are now usually met with. From the histories on record, it may be questioned whether they were not comparatively more successful in this branch of surgical practice; because they were more attentive to minute circumstances, and more assiduous in the application of remedies. It is somewhat remarkable in the history of this subject, that the use of bandages, mentioned by *Read*, and particularly recommended by *Wiseman*, appears to have been almost wholly disregarded for many

* Surgical Tracts, 8vo.

† Whately on the Cure of Wounds and Ulcers of the Legs without Rest.

‡ Bell on Ulcers.

|| Practical Observations on the Treatment of Ulcers.

many years, till the employment was again suggested by Mr Ellis. This gentleman accidentally observed the advantages of tight bandages, and he availed himself of them in their full extent, increasing the degree of pressure by a thin plate of lead being placed over the ulcer.

The great difficulty experienced in healing ulcers on the legs, is attributed by Mr Bell to their dependent situation. To obviate the effects of this, rest and a horizontal position are recommended in every species of ulcer. Dr Underwood, in some introductory observations on the opinions which have been commonly assigned, endeavours to controvert them, and offers an hypothesis to explain the true cause of the difficulty so much complained of. He supposes that, in the lower extremities, there is 'a defect of vital energy, either general or local, owing to their being extreme parts, where the circulation is least vigorous, and occasionally impaired.' The conclusions drawn from this reasoning are, that stimulating applications are necessary for the cure of *all* ulcers, and the free use of exercise, at least with very few exceptions. Mr Whately has signalized himself as a strenuous advocate for the employment of exercise in the treatment of all ulcers, and even recent wounds, after the primary inflammation has subsided. In this short sketch of the writers on this subject, it would be wrong to omit noticing Mr Home's very excellent Practical Observations. His arrangement is simple and correct; his work contains many valuable remarks; yet he has not estimated the comparative merits of the effects of exercise and of rest, although he points out the propriety of employing both these means in different cases. On this point there is still room left for some comment. Is a patient with an ulcer on his leg to keep himself still and quiet? Is *rest* absolutely necessary for his cure? Or may he be allowed to walk about as usual? These are questions which constantly present themselves, and hitherto have received no satisfactory reply. Some assert and advise one means, some positively decide on the very opposite. The variety and the difference in all the methods which are recommended may be reduced to two comprehensive heads, *exercise* and *rest*. To render any general mode of treatment practicable and proper, the union of both these means must be necessary; and it seems strange how one of these powerful agents should ever have been adopted, and the other wholly excluded. So numerous and so various are the circumstances, apparently trivial in themselves, by which ulcers are affected, that it is in vain to attempt upon general principles to determine the *quantum* of exercise or of rest to be regarded. Whether the object be to increase action or to diminish it—to correct the local disease, or to improve the constitution—the success of the means employed

ployed will depend on the habits and physical peculiarities of individuals; respecting which, no one person can be an unerring rule to another. That general plan of treatment is most rational, which grounds the indications of cure on the view of obviating the prevailing morbid actions; while at the same time the means of fulfilling these indications are directed by attention to the causes exciting those actions. If our knowledge of the nature of inflammation, ulceration, and the production of new parts, were more accurate and precise, our curative indications might be rendered more particular, and would be more frequently successful. Acquaintance with the causes, either remote or occasional, which produce ulcers, will influence the method of treating them. This may be stated under three separate heads, which will include the different indications, and may serve to point out the instances where any one of them is more particularly applicable. *1st*, To prevent the access of air, to keep the parts soft and moist, to support the parts, and to regulate the degree of action which the natural powers are able to perform by emollient dressings, mild ointments, poultices, cold water, the use of opium, &c. and by rest and a horizontal position of the limb. *2^{dly}*, To excite a new series of actions in the diseased part, to get rid of the ulcerative process by directly influencing the surrounding vessels and nerves, or, throughout the whole system, by the exhibition of bark, mercury, and those remedies termed stimuli, among which, exercise and tight bandages are the chief. *3^{dly}*, To correct any specific disease or morbid action in the constitution, or in the secreting vessels of the ulcer, by mercury, cicuta, acids, &c. and by escharotic and other active topical applications.

Exercise, as an universal remedy in all cases of ulcerated legs, has been much insisted on; but the advice is too general to be very useful; and, notwithstanding the number of instances adduced to corroborate the truth of the doctrine, many exceptions must be regarded. It would be easy to detail as long a list of unsuccessful attempts to heal ulcers, while the patients were allowed to use their limbs freely, and to walk about; but to state the objections in general terms may be sufficient. In cases of ulcers on the lower extremities, accompanied with a state of irritability, or disposition to violent and inordinate action, where the edges are inflamed, and the surface exquisitely tender and painful, covered with a thin ichorous discharge, free and unrestrained motion proves highly injurious; but the advantages of rest and a horizontal posture are obvious. The inflammation around the ulcer sometimes extending over the whole limb, seems owing, not to the velocity of the blood being increased in the smaller vessels, but to an interruption of circulation between the larger vessels and

and the capillaries: this disturbance of the equilibrium must therefore be kept up, and perhaps greatly increased, by exercise. By placing the limb in an horizontal posture, by enjoining rest, the pain and tension abate, the inflammation subsides, and well-formed pus is secreted, to the great relief of the patient's feelings. Considerable difficulty is always experienced in healing ulcers situated on the ancles, attended with a varicose state of the veins: this difficulty is rendered greater by exercise, and by remaining long in the erect posture. This posture is alluded to by the Roman satyrist Juvenal, as the cause of varicose veins in the legs:

————— '*fiet varicosus aruspex.*' —————

It may be remarked here, that ulcers of this description, and those not few, which have come within the limits of the Inquirer's observation, have always been cured by well-applied bandages, and horizontal posture, without having recourse to the operation of taking up the vena saphena, practised by the old surgeons, and lately revived by Mr Home.

An ulcer from a wound penetrating or partially dividing a muscle, tendon, or tendinous aponeurosis on the leg, is generally attended with inflammation and pain, and becomes difficult to cure, unless precautions are taken to place the limb in an easy, quiet position, by relaxing the muscles, and keeping it in that state by rest and proper bandages. Ulcers seated immediately over a muscle or tendon are scarcely curable, but by absolute rest and well-regulated bandages, to prevent the motion of the diseased and of the surrounding sound parts. The prevailing indisposition of the limb, arising from morbid affections of the system, would form an extensive subject for inquiry, if it were thought necessary to particularize all such various appearances. Let it, however, suffice to observe, in addition to what has already been mentioned, that large foul ulcers from lues, fractured bone, gunshot wounds, lodgement of any extraneous body, and all supervening affections, such as inflammatory swelling, abscess, erysipelatous inflammation, &c.: these may justly be numbered among the exceptions to the general employment of exercise. Few remarks only are necessary to be made on the cases in which exercise and free motion of the limb are found beneficial, and conduce to the cure. Ulcers accompanied by excessive languor in the circulation, and oedematous swellings, coldness of the feet, such as are usually met with in chlorotic patients, in persons advanced in life, in persons who follow a sedentary occupation, are speedily improved in their appearance, by moderate use of exercise, with a roller applied tight from the toes to the knee. In every

every case, when the patient is allowed to stand much or to walk, the application of a bandage is absolutely necessary to support the cellular substance and the muscles, and also in some measure to confine their action. If proper means could be devised to regulate the local effects of exercise, considered merely as a stimulus, one principal difficulty in healing ulcers would be done away. Not only many inconveniences would be obviated, but many advantages gained; for, besides the improvement of the general health, it is found by experience, that ulcers healed under the plan of using exercise and stimulating dressings, are less liable to break out again, than those cured by rest and the milder treatment.

In the list of remedies, firm and well-applied bandages form one of the most important. By compressing the superficial vessels, they render the circulation less languid; and by the support which they give to the muscles and soft parts, they admit of the limbs being often moved without inconvenience. They keep the granulations from rising above the surface, and they dispose the skinning process to take place, by promoting the absorption of neighbouring parts: they not only invigorate by general compression, but by the warmth which they retain; and serve for a defence to the new formed parts. The introduction of the use of litharge plaster by *Mr Baynton*, may be considered a valuable improvement in this branch of practice; inasmuch as the pressure is more steady and uniform, in consequence of the adhesive property of these plaster-bandages; and besides, they are more generally applied by some skilful hand, or at least may be more easily made to press on the parts by ignorant and inattentive dressers. Where strong pressure is required, the plaster-bandage is preferable to the common roller; but the two means should be conjoined, since inconveniences will be found to arise from the employment of the plaster alone. Rollers made of flannel have been much recommended by different authors; but although in some cases they are to be preferred, they are not entitled to unlimited commendation. Such rollers are usually praised for their elasticity, and the ease with which they yield to the movements of the limbs; yet these qualities are sometimes absolute defects; for by their elasticity they are apt to give way, when tightness and steady pressure are required; and by retaining caloric, they will often increase any tendency to inflammation, and produce eruptions on the skin. Rollers made of strong linen or calico appear better adapted for common use.

In this sketch of the different practical opinions, to comment on every author who has written on the treatment of ulcerated legs, would have exceeded the object and limits of this Inquiry.

The

The names of Naylor, Rowley, Burns, John Bell, &c. have been omitted, because their rules of practice differed little or not at all from what has been stated from higher authority. General principles and general objections only have been noticed, and an attempt made to reconcile apparent contradictions, by pointing out some cases where both methods are useful. No one method can, in all cases, be successful; both are useful when discernment is exercised in their application; if exercise in the full extent, or rest in that degree urged by some writers, be adopted, each will, in some instances, be hazardous, and in many prejudicial. In the treatment of local diseases, as well as in derangements of the whole system at large, different modes of practice are not to be estimated in the abstract; the truth of any is more powerfully aided by experience than by assertion. By frequent appeals made to the strict test of experience, the foregoing remarks have been suggested and confirmed.

PART II.

CRITICAL ANALYSIS.

I.

An Essay on Respiration. By John Bostock, M. D. Parts I. & II.
Liverpool, 1804. 8vo. pp. 275.

OUR knowledge of the function of respiration has been greatly advanced by the happy application of modern chemistry to the science of physiology. The facts, however, which have been ascertained, and the theories deduced from them, being dispersed through numerous works, we acknowledge our obligations to Dr Bostock for the present volume, in which he has attempted to collect and arrange these, so as to exhibit a concise and correct view of the present state of our knowledge of this important function. To this task, which he appears to have performed with great ability and judgment, he was urged by another motive. During his attendance on the fever wards at Liverpool, he had been struck with the rapid changes of temperature which the body experiences when labouring under fever. This gave rise to a course of experiments, with a view to ascertain the chemical state of respiration in fever, and in other morbid affections. He soon found it necessary, however, to make himself acquainted with what had been previously done by others; and the volume now offered to the public, must be considered as the result of his inquiries, and as prefatory to the promised observations and experiments on the morbid conditions of this function.

But the plan proposed by Dr Bostock will best be understood from his own words.

“ In treating upon this subject, I shall begin by giving an account of the process of respiration: I shall, in the second part, point out its direct effects: In the third part, the different affections of respiration will be noticed, whether occasioned by the various natural situations in which the body is placed, or by the effects of morbid causes operating upon the system. I shall conclude by investigating its uses, and by an attempt to ascertain the connexion

connexion which subsists between respiration and the other functions.

The first and second parts only of this plan are given in the volume now before us ; the others are reserved for a future publication.

After giving a short description of the human organs of respiration, and of the mechanism of that function, Dr Bostock proceeds to examine the various attempts which have been made, from the time of Borrelli downwards, to ascertain the capacity of the lungs, and the quantity of air received and emitted in ordinary and extraordinary respiration.

Upon the whole, he gives the preference to the estimates deduced from the experiments of Drs Goodwyn and Menzies.

' It may be estimated,' he concludes, ' that by each ordinary expiration one seventh part of the whole contents of the lungs is discharged ; and that, by the most violent expiration, somewhat more than four sevenths of the air contained in them is evacuated.'

It has commonly been admitted, that the last expiration of a dying animal is perfect ; and, on this supposition, Dr Goodwyn made his experiment to determine the capacity of the lungs after a complete expiration. Dr Bostock also maintains, that after the most powerful voluntary effort of expiration, by which above 200 cubic inches of air may be expelled, the lungs will be only reduced to the state in which Dr Goodwyn made his experiments, when he found them to contain 109 cubic inches. To this opinion, however, we cannot subscribe. Such a powerful voluntary effort, or what has been called a forced expiration, is performed by bringing into action the abdominal and other muscles, by which the ribs are pulled downwards, and by prolonging the contraction of the diaphragm, so as to diminish the capacity of the thorax to the utmost. Now, it is evident that this cannot be the kind of expiration which takes place in *articulo mortis*. The last expiration will be the greatest only that can be performed by the complete relaxation of all the muscles of inspiration ; so that there must still remain in the lungs a great part of that air which is expelled in forced expirations, by a more powerful and prolonged contraction of the muscles, which cannot be supposed to act in the moribund, or, if they did, must instantly relax, and restore the thorax to its mean capacity.

According to Mr Davy, the capacity of the lungs, after a forced expiration, does not exceed 41 cubic inches, which differs considerably from Dr Goodwyn's estimate. Every one is acquainted with the very ingenious experiments of Mr Davy. Dr Bostock, however, observes, that the capacity assigned by him ' is so in-

compatible with the ideas derived from a consideration of the anatomical structure of the thorax, that it is impossible to avoid suspecting the existence of some error or fallacy in the process which he employed.' Dr Bostock alleges that the hydrogen breathed by Mr Davy was not diffused uniformly through all the cells of the lungs; that it had not mixed itself with the air contained in the vesicles, in the same proportion as in the larger branches of the bronchia; and that, consequently, the air, upon which the experiment was made, would contain a greater proportion of hydrogen than the average of the whole air contained in the lungs; which would give the estimate of their capacity, deduced from the quantity of hydrogen, necessarily below the truth.

The first part of this Essay is concluded by an 'Inquiry into the cause of the first inspiration, and of the alternation of inspiration and expiration.'

In the second part, are considered the direct effects of respiration; the mechanical effects produced by the dilatation and contraction of the thorax; the changes produced in the inspired air; the alteration which the blood experiences during its passage through the capillaries of the lungs.

The old physiologists, entirely ignorant of the chemical changes produced upon the air and the blood by respiration, attributed much to the alternate dilatation and contraction of the thorax and lungs, mechanically promoting the circulation of the blood through the pulmonary and hepatic systems, and the flow of the chyle through the lacteals. During the contraction of the diaphragm, the œsophagus was supposed to be compressed; important effects were imagined to result from the action of the same muscle upon the aorta and cava, and from the alternate compression and relaxation of the nerves which pass through it.

The greater number of these opinions, however, are now deservedly forgotten; and there can be little doubt that the mechanical effects of ordinary respiration are very inconsiderable.

Dr Bostock gives a faithful account of the discoveries and experiments of philosophers, from the days of Boyle and of Mayow down to the present time: And from these, after many judicious observations, he attempts to determine the changes produced in the air by respiration, the quantities of oxygenous and of azotic gas which disappear, and of carbonic acid gas and of water formed.

Of the knowledge we have hitherto attained of these changes, the following summary is offered.

1. A quantity of oxygen is consumed in respiration. In ordinary circumstances, atmospheric air, which has been once respired, loses nearly .04 of its bulk of oxygen. In twenty-four hours

hours a man consumes a quantity which will weigh about 2 lb. 8 oz.; somewhat more than 26 cubic feet.

' 2. A quantity of carbonic acid is generated by respiration; its volume is less than that of the oxygen absorbed, nearly in the proportion of 37 to 45; the weight of carbonic acid formed in 24 hours is about 3 lb., a volume of about 22 cubic feet.

' 3. The whole volume of the air is diminished by respiration; the degree of diminution is not very accurately ascertained, but it may be estimated at about $\frac{1}{80}$ of its bulk.

' 4. A quantity of aqueous vapour, the amount of which is still undetermined, is emitted from the lungs.

' 5. It is probable that a small portion of azote is absorbed, upon an average about $\frac{1}{800}$ part of the air respired, making, in 24 hours, about $4\frac{1}{2}$ oz., or 4 cubic feet.

' 6. From the ascertained proportion in which the oxygen and pure charcoal exist in carbonic acid, it appears that a greater quantity of oxygen is consumed than is necessary for the formation of the carbonic acid which is produced.'

The change of colour which the blood undergoes in the lungs, early attracted the attention of physiologists. This was at first attributed to the violent agitation which the circulating fluid suffered in its passage through the pulmonary circulation. Some imagined that the blood had parted with somewhat noxious, and others that a certain pabulum was attracted from the air. Lower had proved experimentally, that the bright scarlet colour acquired by the blood in the lungs, was owing to the action of the air: his experiments, however, produced but little conviction, and his doctrine was opposed by Haller.

The experiments of Cigna, of Priestley and others, have now established this fundamental truth, and demonstrated, that the change from the venous to the arterial colour is occasioned by the absorption of the oxygenous part of the air. The theory of Lavoisier and Crawford is fully stated and examined by Dr. Bostock. Against this theory the principal objection seems to be, that the blood may be changed from the arterial to the venous state without the addition of carbon, hydrogen, or any new substance, and merely by a different arrangement of its constituent elements; as has been demonstrated by the experiments of Hunter, Fourcroy, and Hassenfratz.

' It became necessary, therefore,' he observes, ' to abandon the theory of respiration, which attributed this change to the absorption of inflammable matter during the aortic circulation, and to form one in which the attraction might be produced by the mutual action of the constituent parts of the blood upon each other.'

Such appears to be the theory proposed by La Grange, which, as modified by Mr Allen, our author thinks, affords an easy explanation of every phenomenon. 'The blood, in its passage through the capillaries of the lungs, absorbs oxygen, which is loosely united to the whole mass of fluid: by this union, its colour is changed from a deep purple to a bright scarlet. The oxidated blood is thus carried along the arteries: in the course of the circulation, the oxygen leaves the whole mass of blood, and forms an intimate union with a part of the hydrogen and carbon contained in it: by this operation it loses its bright colour, and assumes the venous appearance. This portion of hydrogen and of carbon, reduced to the state of an oxide, is then carried along the veins until it arrives at the lungs, where, after being united with an additional quantity of oxygen, it is discharged from the blood, and forms the carbonic acid and aqueous vapour which are found to exist in the air of expiration.'

It was supposed by La Grange and Hassenfratz, as well as by Lavoisier, that the oxygenous part of the air is alone absorbed in the lungs; but the experiments of Mr Davy have rendered it, we think, highly probable that the azotic part is at the same time absorbed, though a much smaller portion of it is retained by the blood. To Dr Bostock, however, it appears more probable 'that the blood exercises its attraction upon the oxygen alone; but that, in consequence of the powerful affinity which a large mass of one of these gases possesses for a small quantity of the other, the oxygen which is absorbed by the blood still retains a minute portion of azote in combination.' But to this ingenious conjecture, founded on the law of affinity, pointed out by Berthollet, it may be objected, that the blood appears to have a greater attraction for the atmospheric compound of oxygen and azote than for pure oxygen, inasmuch as more of it is consumed in equal times, during the respiration of common air, than of oxygenous gas.

Dr Bostock having reviewed in succession the opinions which have been entertained with regard to the changes effected in the blood by respiration, thinks that although the subject still remains involved in much obscurity, the present state of our knowledge may be comprised in the following propositions.

1. 'The blood which is expelled from the right ventricle of the heart into the pulmonary artery is of a dull purple colour: during its passage through the capillaries of the lungs, its colour is converted into a bright scarlet, in which state it is returned to the left auricle of the heart.

2. 'The change of colour is effected by the oxygenous part of the atmospheric air, which is received into the vesicles of the lungs,

3. 'The blood, in passing through the lungs, emits a quantity of carbon, which is expired in combination with oxygen, under the form of carbonic acid gas.

4. 'The blood possesses an attraction for oxygen; and, during its passage along the capillaries of the lungs, it absorbs a quantity of this substance.

5. 'To one of these circumstances, viz. the emission of carbon and the absorption of oxygen, or to the combination of the two, is to be attributed the change from the purple to the scarlet colour, which the blood undergoes during its passage through the lungs.

6. 'The same change of colour is produced, when a portion of the clot of venous blood is exposed to the action of oxygenous gas, and the process is not interrupted by the interposition of a moistened membrane, or a stratum of serum, between the crassamentum and the air.'

7. 'When arterial blood is exposed to the azotic, hydrogenous or carbonic acid gases, or placed in the vacuum of an air pump, it assumes the purple hue of venous blood.

8. 'The oxygen, which is, in the first instance, loosely combined with the whole mass of blood during the course of circulation, gradually enters into a more intimate union with a part of its carbon, and forms with it an oxide. When this oxide is brought back to the lungs, it unites with an additional quantity of oxygen, so as to form carbonic acid, and is then removed with the air of expiration.

9. 'The blood receives its supply of carbonaceous matter from the contents of the thoracic duct, which are poured into the left subclavian.

10. 'It has been supposed that, besides the carbon, a quantity of hydrogen is discharged from the blood by the lungs; but this opinion appears to have been adopted without sufficient foundation.

11. 'In consequence of the abstraction of a quantity of carbon from the blood, the proportion of azote in the residuum is augmented: it is also probable that a small quantity of azote is absorbed by the blood immediately from the atmosphere.

12. 'When the blood is converted from the venous to the arterial state, its capacity for heat becomes increased: the specific heats of venous and arterial blood are in the proportions of 10 to 11½.

13. 'The blood, in consequence of its passage through the lungs, appears to have its constituent parts more uniformly mixed together; but this effect is to be attributed merely to the agitation and pressure which it experiences during its course through

the minute and convoluted net-work of vessels which compose the capillaries of the lungs.

14. ' Besides the circumstances which have been enumerated, the arterial differs from the venous, in consequence of the substances separated from it, to form the different secretions; but these changes are not to be attributed to the effects of respiration, and it is absolutely impossible to appreciate their amount.

15. ' A considerable quantity of aqueous vapour is emitted from the blood; but this is the effect of transpiration, and consists of water which had been poured into the blood ready formed, by the thoracic duct, along with the other products of digestion and absorption.'

Our author now brings this volume to a close, by some observations on the respiration of the different gases.

In the first and second parts of his essay, Dr Bostock has performed the office only of a well informed and faithful historian. The third part, in which he proposes to treat of the different affections of respiration, will consist chiefly of original experiments and observations; but these, he informs us, are still in too imperfect a state to meet the public eye. We are happy, however, to learn, that his experiments have already furnished him with some interesting results; and hope he will soon be enabled to complete his plan, for which, from the specimen already given, he appears so eminently qualified.

II.

A Dissertation on Gout; exhibiting a New View of the Origin, Nature, Cause, Cure, and Prevention of that afflicting Disease: Illustrated and Confirmed by a variety of Original and Communicated Cases. By Robert Kinglake, M. D., &c. Physician at Tauntoun. 8vo. pp. 348. London. 1804.

WE have so long been conscious of the impotence of medicine in the ordinary treatment of gout, and have felt so much reluctance in being compelled to confess it, by repeating the empty sounds of 'flannel and patience,' that we are disposed to listen with pleasure to the proposal of any practice, which may be attended with something more than negative advantage. It is true indeed, that, from the age of Sydenham to the present time, a host of authorities may be adduced in favour of this temporizing

temporizing system, and in proof of the deleterious effects of all active remedies; and it will be naturally inferred, that this notion was the result of careful induction from an ample series of facts. When we recollect, however, the tendency of the human mind to adopt implicitly, and without examination, the prejudices of early instruction, as well as the numerous unfounded errors which have thus been propagated from age to age, sanctioned by great names, and bearing the semblance of experience, we are apt to question the infallibility of authority, and to listen with deference to every rational proposition. A liberal discussion, which excites to investigation on the one hand, and to a revision of facts on the other, if it fail to correct established error, will tend at least to the corroboration of truth.

We entered with alacrity, therefore, on the perusal of Dr Kinglake's dissertation, in which the speedy removal of the local inflammation of gout is recommended to be attempted, by the use of cold applications, in the same manner as in other topical inflammatory diseases. And it must be observed, that, however powerful and general authority may be, in testimony of the danger of such an expedient, it cannot be more strong nor more dictatorial, than it was a few years ago, in condemnation of the slightest attempt to introduce the external use of cold water in general fever. Yet experience now justifies us in ranking this practice, in its application to Typhus and Scarlatina, among the most important improvements in medicine, which the present age has produced; and its signal success induces a hope, that the farther study of morbid temperature, whether in local or general affections, will contribute to augment the efficacy, and to extend the utility of our art.

Analogy, however, and reasoning *à priori* are confessedly not sufficient to counterbalance the evidence of long experience. It was incumbent, therefore, on Dr Kinglake, either to diminish the force of the latter, by proving the existence or the source of some fallacy; or to add such a weight of testimony, deduced from experiment, to the lighter scale of analogy, as might determine the balance in its favour. And had he been contented to bring forward that portion of his work which constitutes the Appendix, and contains a copious collection of testimony in favour of the new practice, he would have gone far, we believe, to establish his position, and could not have failed to shake the prejudices of the most inveterate advocates for received opinions. But the effect of that testimony is considerably diminished by the systematic treatise which precedes it. For, in the first place, we are put on our guard against the implicit reception of the facts, when we are informed that they are the
result

refute of a preconceived theory; a theory which the author advances with great claims to originality; and which, could we venture to affirm that we comprehend it through the affected phraseology in which it is delivered, we should be disposed to consider as equally original and absurd. In the next place, in order to shew the propriety of his treatment, he thinks it necessary to prove several positions, somewhat in opposition to common opinions, in which attempt he cannot be considered as altogether successful. These are, 'that gout differs in no essential circumstance from common inflammation; that it is not a constitutional, but merely a local affection; that its genuine seat is exclusively in the ligamentous and tendinous structure; that its attack is never salutary; that it should neither be encouraged nor protracted; and that, if seasonably and appropriately treated, it is as easily remediable as inflammatory excitement on the muscular, cuticular, or any other description of organic texture.' Pref. p. vii.

In section first, Dr Kinglake professes to treat of the *origins* of gout; but only informs us, that 'the origin of gout must have been nearly coeval with human existence, since both the physical and moral causes which give birth to it, must have occasionally prevailed in the earlier ages of mankind.'

In section second, he attempts to prove that gout is merely a local disease; but falls into that common error among theorists, of reasoning in a circle. He first assumes a definition, which necessarily implies its locality, and then denies its constitutional existence, upon the credit of this gratuitous definition. 'The seat of the gout is exclusively in the ligamentous and tendinous fabric; the texture of which, when inflamed, affords all that is peculiar or characteristic of gout. This fabric, therefore, is necessary to the constitution of what is called gouty inflammation, which evinces that it cannot occur on any of the visceral or vital organs, as these possess nothing of the ligamentous or tendinous structure.' (*Recapit.*) This is the author's great argument—the essence of his new view of the nature of gout; and it is therefore reiterated, from beginning to end, as a satisfactory refutation of the common opinion. But a definition, founded on a mere *petitio principii*, cannot explain away the facts upon which that opinion is grounded. And it cannot for a moment be supposed, that by changing the name of the constitutional affection, we change its nature, or disprove its connexion with the local disease. In several passages, Dr Kinglake acknowledges the existence of a certain constitutional condition, in which the different viscera shew a great susceptibility to various forms of disease, while the ligaments about the toes and fingers are at the same

some time liable to the inflammation of gout: he also admits that numerous affections of the system, or of particular viscera, especially of the stomach, generally occur during the true gouty inflammation, and frequently succeed to that local disease; and he does not attempt to deny that they often alternate with each other. But this, we believe, is all that a rational physician will now maintain. The humoral pathology of the disease, the notion of a *materies morbi* floating in the system, and deposited on this viscus, or on that ligament, will not now be contended for. In declaiming against this notion, as the foundation of the common hypothesis, Dr Kinglake seems to forget that Dr Cullen long ago refuted the idea of morbid matter, at great length (*First Lines*, DXXIX.), while he fully retained the opinion of the constitutional nature of gout. It is very idle to affirm, that the constitutional condition is not *gouty*, but only a great 'morbid excitability, preponderant upon particular viscera, or on the ligamentous and tendinous structure.' This is only defining more explicitly the common idea expressed by that word; at least the popular term, and Dr Kinglake's circumlocution, convey to our mind precisely the same notion. From this statement, therefore, no inference to a change of practice appears to be deducible. In order to sanction a deviation from the common treatment, it should have been demonstrated, we conceive, that (admitting the constitutional irritability and 'the familiar occurrence of these associated affections' (p. 62.) which no one disputes), the danger of an attack of the viscera, in consequence of the suppression of the local disease, has been exaggerated by preceding physicians; that the morbid excitability may be diminished or removed by medicine and regimen, previous to, or during the local attack; and that, by the same means, the danger of alternation may be lessened, or altogether obviated. And, although this has not been directly attempted in the dissertation, it affords us considerable gratification to remark, that these inferences appear to be in a great measure deducible from the body of facts which Dr Kinglake has brought forward in his appendix, whatever credit may be due to his previous hypothetical reasoning. In advancing our objections, therefore, to his theory, so far from attempting to invalidate his *practical* conclusions, or to divest him of any portion of his claims to the suggestion of an important practical improvement, we are actuated by a sincere wish to recommend a full and candid investigation of the latter, to those who might be deterred by the defects of the former, upon the credit of which it is avowedly founded.

His next position is, that the inflammation of gout is essentially the same with all other inflammation, modified only by the peculiar

peculiar structure of the parts in which it is seated. (*vide* p. 10. *et seq.*) He adopts the axiom laid down in Newton's *Principia*, that 'causes acting in similar circumstances must produce similar effects:' and illustrates the general fact, by stating that the physical act of vomiting is the same, whether induced by tartarized antimony or ipecacuanha. Mechanical illustration, however, is in few cases applicable to the phenomena of life, and has unfortunately too much retarded the investigations of pathology; whilst the too speedy generalization of these phenomena has lately contributed to the same effect. The Newtonian rule is, in consequence of this generalization, erroneously applied, and therefore advanced in sanction of erroneous conclusions. It may, in the present instance, be collected by the most obvious implication even from Dr Kinglake's own words, that the circumstances are not in all cases similar. 'Sprain,' he observes, (p. 16.), repeatedly occurring on the same ligaments and tendons, will at once render them additionally liable to *inflammatory extension* from external accident, and to *gouty irritation* from the usual causes, with all its *morbid sympathies* with other joints.' Again: 'Ligamentous excitability, stimulated to the extent of inflammatory action, may assume different forms, but changes not its fundamental nature. In the lumbago or disease of the lumbar vertebral ligaments, the sciatica, or hip-gout, the white swelling or ligamentous inflammation and thickening of the knee and other joints, are various examples of inflammatory excitement, of the same structure as that which is the seat of gouty irritation; and these acknowledge no other difference than what consists in degree and situation.' *Ibid.* But the seat is the same: white swelling and gout, then, are only different degrees of the same complaint! Thus, one circumstance common to all, viz. excitement, is alone attended to; and all the minute peculiarities of appearance, relative connexion, and consequence, are overlooked. Upon the same principle it may be affirmed, that inflammation of the skin differs only in the degree of excitement, whatever denomination we may give to those degrees; whether one be called *erysipelas*, another *scarlatina*, *variola*, *varicella*, *rubeola*, *lepra*, *herpes*, &c. But it would be injudicious, we apprehend, to regard the excitement alone, unmindful of the peculiar consequences of each modification, and the 'morbid sympathies' by which it is connected with other parts of the system. The existence of these sympathies, and the expectation of these consequences, are sufficient to warrant an attention to *practical* varieties of treatment, did not the specific differences in the contagion or other causes, as well as of appearances, evince a difference in *kind* where the seat of the diseases is the same.

same. It is scarcely necessary to remind Dr Kinglake, that similar differences may be traced between gout, rheumatism, white swelling, and sprains. The obscure and internal causes, the morbid sympathies, the periodic returns, the deposition of urate of soda, are peculiar to the first. The external evident cause, the muscular seat of the pains, the effusion, if any, of coagulable lymph, mark the second. The slow and imperfect suppuration of scrofula is sufficient to designate the third. And the absence of all these peculiarities, as well as its mechanical cause, will discriminate the last.

While we thus, however, condemn that hasty generalization, which precludes an attention to particular circumstances, we are ready to concede to the author, that too much attention has been often employed in detecting differences of trivial practical importance. We are also willing to admit, that the degree of excitement is the great and fundamental fact, by which our practical views are to be principally directed, whatever may be the specific origin or constitution of a disease; and that this truth, which may be deemed one of the most valuable suggestions of the Brunonian theory, has not been sufficiently appreciated, nor duly applied in practice. All that we are disposed to contend for is, that there are peculiar circumstances which occasionally demand our practical observation, and that an attention to the excitement ought not to supersede a consideration of the morbid sympathies and consequences of diseases. By removing a painful, but temporary, excitement in the foot, we may possibly (if Sydenham and Cullen are to be believed) excite, by sympathy, a fatal disease in the stomach; and it matters not by what name we agree to call the latter. It were idle indeed to say, 'that the sympathy will not have transferred either ligament or tendon to the stomach, and of course cannot have endued it with the physical possibility even of being affected with gouty inflammation.' (p. 62.) We are not contending for the name, but for the fact: and to this point, we repeat, Dr Kinglake should, in our opinion, have directed his observation more precisely. Had he shown in what circumstances such retrocession or morbid sympathy is to be apprehended, and how it might be obviated; or proved that it is a mere bugbear of medical speculation, and explained why its occurrence has been falsely imagined to be frequent: had he pointed out any source of error, or openly met and controverted the fact, he must have gone far to extort our conviction. But, even in his valuable appendix, the attention is not directed sufficiently to these points, and the circumstances of the patients, by which they might be elucidated, are not detailed with sufficient discrimination, to enable us to call it a satisfactory

satisfactory conclusion. They are sufficient, however, to excite some degree of scepticism in regard to the received opinion.

In the following section the author treats of the proximate cause—the essential part of the new theory by which the new practice was originally suggested. Its novelty we shall not dispute. We give the doctrine to our readers in the author's own words.

‘The proximate cause of gout results from the aggregate efficiency of the remote causes, and is truly the disease itself. This efficiency or proximate cause, by which the disease is constituted, consists in an agitated and increased degree of vital or repulsive motion in the affected parts.

‘By vital motion is meant a repellency, subsisting between the constituent particles of all matter. This innate power or property is, by a law of nature, spontaneously evolved from atomical surfaces, and assumes character and determinate force, when issuing from the congeries, or combination of material substances, which forms specific or particular structure.

‘The exertion of this universally repellent power, in the organic fabric of the animal economy, is life, or vital motion. The action of this power denotes itself in animal feeling, as heat: an undistinguishable identity, therefore, with respect to the object, subsists between what has been variously denominated repulsive motion, vital action, and heat.’ (p. 76.)

On the perusal of this luminous theory, we turned almost involuntarily to the author's preface, to ascertain whether he dated from St Luke's, or the wing for Incurables in Moorfields. If any one of our readers can solve this enigmatical hypothesis, we will hail him as a Magnus Apollo. For our own parts, we have endeavoured in vain, unaided by the oracle, to develop the mystery. Perhaps the following may be something like an epitome of it. ‘Gout consists in an agitated degree of life (or vital motion), or in an agitated degree of repellency, or in an agitated degree of heat in the affected parts! For repulsive motion, vital action, and heat, are identically the same.’

Hence, Dr Kinglake considers that *it will be easy to perceive that* ‘the real cause of all the distressing torture occurring in inflammatory gout, consists in almost a combusive degree of redundant heat, or repulsive motion,’ (p. 77.): and hence, we must allow the suggestion of cold water, by which the combustion might be extinguished, would very naturally occur.

We shall not pretend to offer any comment upon speculations which elude our intellectual powers. Had the author simply stated, that the reduction of temperature in phlegmonous inflammation was known to be efficacious in removing the disease; that,

by analogy, he conceived the propriety of extending the principle to gouty inflammation; and, lastly, that experiment had confirmed the rectitude of his conception; we should have at once accorded with him in a generalization equally philosophical and important. And, in truth, this is the only intelligible construction which we can put upon his theory. We shall proceed, therefore, to examine briefly the practical inferences, and the facts which he has adduced, recollecting the admonition of Celsus;—
'Ne inter initia quidem ab istis questionibus deductam esse medicinam, sed ab experimentis.'

In sect. IV. Dr Kinglake states, that the great indication in the cure of gout, is to diminish the general and local heat. And, for this purpose, he recommends diluents and spare diet, and, above all, the application of *cold water* to the inflamed parts.

'It should be applied topically to the affected parts, either by means of wetted cloths, by gentle showering, or by actual immersion. A durable degree of cold must be supported; the refrigerant force, therefore, of its first application must be uniformly continued, by frequently renewing the cold water, which soon becomes heated by the inflammatory temperature of the affected parts. This course should be pursued until the painful sensation of burning heat shall subside, and with it the concomitant effluence and tumefaction.' p. 83.

'Both the local and general mode of reducing morbid heat, here recommended, must be understood to be as strictly applicable to every shifting or sympathetic attack on a fresh joint, as to the original seizure.' p. 87.

'Reduced temperature, adequately applied, will, in a vast majority of instances, effectually remedy every grievance, and leave nothing for medicinal assistance to accomplish.' p. 89.

But, in some cases, which he does not sufficiently specify, he has been accustomed to prescribe camphorated tincture of opium, and volatile tincture of guaiacum in considerable doses every four hours. These, we presume, were cases of old gout, accompanied with debility, and in which the viscera were likely to suffer by 'sympathetic association.' He remarks, that opium is often efficacious in alleviating the pain, if used in conjunction with the refrigerant plan, when it had failed altogether to produce this salutary effect previously. This important fact is perfectly analogous with what we know of the effects of opium in the different states of excitement in other diseases.

After the inflammation has subsided, he recommends friction, gentle motion, and warmth of the part.

By this treatment, he affirms, the parts usually affected are not allowed to become distorted and crippled, and to deposit stony concretions;

concretions ; and the general state of the constitution is preserved from that irremediable injury, which is occasioned by the irritation of protracted gout.

If the general experience shall confirm this statement ; if these important objects are attainable with safety and facility, and a valuable portion of mankind be thus enabled to ward off a most severe and continually increasing disease, Dr Kinglake will be justly entitled to be ranked among the benefactors of society.

In the appendix, about 30 cases of gout are detailed, and several others mentioned, in which the application was invariably and speedily successful in relieving and curing the disease. In some of the cases, the disease had been of long standing, and the constitution considerably undermined ; in one it existed in combination with asthma. Yet the much dreaded repulsion did not take place ; but, on the contrary, the relief was great and sudden. Eight or ten of these cases are related by Dr Kinglake himself ; the remainder, by various practitioners, who having preconceived no theory, cannot be suspected of self-deception.

The extension of the general fact to the treatment of acute rheumatism, is also a matter of great importance. Ten cases of that disease are also detailed in the appendix, in which the external application of cold water proved a speedy and effectual remedy. This disease, under the common modes of treatment, is productive of much misery ; and although we are satisfied of the advantages of a free exhibition of opium with diluents, and of proscribing blood-letting, if more extended experience shall coincide with that adduced by Dr Kinglake, the refrigerant will supersede all the variety of practice hitherto adopted. The evidence here stated is such, that it certainly authorises a fair but cautious trial.

We have said nothing on the subject of the *prevention* of gout, on which Dr Kinglake has written a very excellent section, detailing, in a perspicuous and sensible manner, the measures by which that object may, in young subjects at least, be accomplished ; because his ' view ' of the matter is in no degree ' new.' All that he has adduced has already been given us by Sydenham and Cullen ; and the principal part even by Celsus. And Dr Kinglake may perhaps remember, that his doctrine has long been illustrated, both by precept and example, by the present distinguished professor of the practice of medicine in the University of Edinburgh. In addition to temperance and exercise, and warm clothing, Dr K. recommends that the feet, as well as the hands, be washed in cold water every morning.

We cannot conclude, without entering our protest against such an abuse of language as the style of this dissertation displays. Every word is *sesquipedalian*, and the whole is a mongrel of English and Roman

Roman breed, which betrays a greatly vitiated taste, and contributes to produce perpetual obscurity. Our powers of comprehension have been upon the stretch from beginning to end. When we read of 'distempered excitability on the fascial parts, inducing morbid changes, which becomes so radically influential in the motive powers of the system, as to generate a transmittable state of temperamental susceptibility for morbid affection,' p. 49. we are almost compelled to exclaim with the boor in the farce, 'Anan, Sir, I don't understand *Latin*;' for, in good truth, it bears very little resemblance to our vernacular tongue.

Free as we have been in our condemnations of the theoretical part, and of the pompous obscurity of the style of this dissertation, we have perused the detail of facts with great pleasure, and not without advantage. They appear to us to open new and important views of the nature of many diseases, and of the attention which we shall ultimately, perhaps, be induced, in all instances, to pay to morbid sensation, and the instinctive demands of nature. A refutation of the idea of danger from repulsion being once established in respect to gout, it will be considered *inftar omnium*, as leading to an extension of the refrigerant practice to other diseases, such as erysipelas, &c. in which we are at present little more than harmless spectators. But some reverence for authority, and much caution, will still be due from us. And we should have acknowledged still greater obligations to Dr Kinglake, had he, like his distinguished predecessor in the study of morbid temperature, Dr Currie, not at once denied the existence of the danger which is commonly apprehended, but shewn us, from a careful and intelligent induction, the circumstances on which it depends, or has been suspected to depend, and also those which may guide us to avoid it.

III.

An Account of Two Cases of Gout, which terminated in Death, in consequence of the external use of Ice and Cold Water. By A. Edlin. 12mo. pp. 24. Uxbridge.

THIS pamphlet contains, in fact, but one case upon the authority of Mr Edlin's personal experience; for the second, which is mentioned in a note, is merely given from the recollection of two old women, and occurred thirty years ago. In the former, the cold application was speedily and effectually beneficial; for it entirely removed the pain in less than three hours. But palpitation, vomiting, and a sensation of coldness in the stomach, with intermitting pulse, difficult respiration and

coldness of the extremities, are said to have supervened in a few hours; and having recurred once in the interval of a week, a third attack then proved fatal.

This case is related with little or no discrimination; the state of the patient's constitution, the previous number of attacks, &c. are not mentioned. And as Mr Edlin laboured under so severe a paroxysm of prejudice, as to be 'almost petrified with horror' at the sight of the 'rash' practice, a single case, which in no instance can prove much, in this must be deemed of very little weight. It seems, indeed, to be one example of what is commonly understood by repelled gout; but anomalous attacks of the viscera are very frequent in irritable constitutions, independent of gout, or its suppression. Unless, therefore, we are in possession of an accurate statement of all the concomitant circumstances, such cases will serve to make us more cautious; but they will not warrant a sweeping conclusion, that any particular cause excited the symptoms in question.

IV.

A Reply to Mr Edlin's Two Cases of Gout, &c. To which is added, An instance of the Fatal Effects of Encouraged Gout; with Observations, Caution, &c. By Robert Kinglake, M. D. &c. 8vo. pp. 61. Taunton. 1804.

DR KINGLAKE replies to Mr Edlin with some asperity; but his answer is extremely satisfactory. In addition to the observations which occurred to us on the perusal of Mr Edlin's pamphlet, he remarks, that 'the narrative recounts a selected, partial, and inconclusive group of symptoms,' which are by no means those of repelled gout, as it is usually described. No complaint is made of *pain*; and Dr Kinglake considers it rather as approaching to an attack of syncope. He, in his turn, intimates a probability, that the over-stimulant remedies which were administered, might be more instrumental in hastening the fatal event, than the cold application previously employed; but, in our opinion, very unjustly. It is an imputation which could only arise from the error which Dr Kinglake has fallen into, of considering the affection, which takes place in the viscera in consequence of repelled gout, as *inflammatory*.

Dr Kinglake adds, that the refrigerant treatment is rapidly gaining ground in the neighbourhood of Taunton; and that he is already in possession of a considerable addition to his stock of cases in its favour, from correspondents in different parts of the kingdom, which he shortly intends to publish.

V.

Observationes et Epicrisis de Corticis Peruviani salutari et proficuo usu in Podagra. A Francisco Tavares, Archiatro Lusitanico, &c. 12mo. Olisipona. 1802.

THIS little work also relates to the discovery of a cure for the gout, or rather the renewal and confirmation of a neglected remedy. Sydenham conjectured that Cinchona would be found useful in this disease; and Held ascertained by experience the truth of his conjecture. Notwithstanding these authorities, however, regular practitioners seldom if ever prescribe it, deterred, most probably, by its partial analogy to bitters, the fatal consequences of which are too well known. But, after eight years experience, Dr Tavares recommends it not only as a certain, but as a perfectly safe remedy. He was induced to try it, not from any preconceived theory, but in consequence of an accidental observation of its successful employment, by an ignorant and empirical barber-surgeon.

Professor De Lemos, who had been the author's pupil, was called, in 1793, to a monk in extreme agony, from a paroxysm of gout. He prescribed, as usual, patience and attention to diet; but his advice was rejected by the monk, who found more consolation in the promises of a surgeon to cure him speedily. His plan of treatment was to give first a purgative, consisting of half a drachm of resin of jalap, as much scammony, and half an ounce of syrup of poppies; and afterwards to exhibit half a drachm of cinchona every hour. As the patient was cautioned against the violence of the purgative, it is not known how much of it he swallowed; but, in twenty-four hours, he took two ounces of cinchona in powder; and when the Professor returned, expecting to find him much worse, to his astonishment, he was walking with the help of a stick; and in two days more, he was able to go abroad.

The observation of this fact naturally led Professor De Lemos to make further trials of this treatment, only substituting sulphate of magnesia for the drastic purgative. He found it uniformly successful, and his experience of its excellent effects was fully confirmed by our author, to whom he communicated it. Seven cases are related in this pamphlet; two of which were treated by Professor De Lemos, and five by Dr Tavares, whose own case, for he was a martyr to hereditary gout, is circumstantially detailed. In all of these it not only seemed to cut

short the paroxysms, but to render them less frequent; and in no instance does it appear to have been attended with any bad consequences.

In the second part, Dr Tavares endeavours to shew that the use of Peruvian bark in gout is recommended both by facts and analogy. In addition to his own experience, and that of Professor De Lemos, he has only adduced that of Dr Godfrey Held, recorded in the *Ephem. Nat. Curios. Cent. 3. & 4. Obs. 170*, and which is summed up in these words: ‘*Uno verbo, cortex Peruvianus in podagra divinum est remedium, quod multijuga experientia edoctus certò et firmissimè asseverare non nequeo.*’ His analogical reasons for its use, are the analogy between gout and other diseases, in which the good effects of cinchona are ascertained, and the analogy between the properties of cinchona and of those substances which are thought of the greatest service in gout.

On the whole, this little work of Dr Tavares gives a very favourable idea of the state of medical science in Portugal; and the facts which he has adduced are certainly sufficient to warrant a fair trial to cinchona in this disease, hitherto classed as an *opprobrium medicorum*.

VI.

Traité des Maladies Goutteuses. Par P. J. Barthez, Medecin du Gouvernement Français, &c. &c. 2 tomes, 8vo. Paris. An X.

THE object of the publications which we have just noticed, is to establish the true value of certain remedies proposed for the cure of gout. That of the work before us is much more extensive, as it embraces the history of all the varieties of gouty and rheumatic affections, the most rational opinions respecting their nature and causes, and the investigation of the best methods of treatment. It is impossible at present to attempt a detailed account of a work of so comprehensive a plan, especially as its merit consists rather in judicious compilation, than in remarkable originality.

His theory of the disease seems indeed curious; but, from not having been able to procure his *Nouveaux Elemens de la Science de l'Homme*, to which we are referred, we cannot judge of the truth of the principles on which it is founded. ‘*L'état goutteux des solides,*’

solides,' says he, 'est une affection speciale, qui survient à des états vicieux ou de constriction ou de relachement dont ils peuvent être affectés, et qui donne à l'un et à l'autre une permanence singulière. Il me paroît extrêmement vraisemblable que cet état goutteux des solides est produit par l'action de la force de *situation fixe* entre les parties du tissu des fibres; force dont j'ai le premier connu et démontré l'existence dans les muscles et les tendons, et qui peut être supposée exister dans les autres organes mous.' The only information regarding the nature of this force of *situation fixe*, is contained in a note, in which we are told, that 'the vital principle is capable of acting on the substance of the muscular and tendinous fibres, by a different force from that by which it produces contraction; so that it fixes the parts in a determinate relative situation, and prevents them from being separated by powers very superior to the physical cohesion of these fibres.' As he does not at all shew how this theory explains the phenomena or cure of this disease, it must be regarded as a mere hypothesis, and would not have deserved notice, if it had not been the principal novelty in the work.

As a compiler, however, the abilities of Dr Barthez are highly respectable. Every where are evinced marks of great research and sound judgement. Let us take as an example, and as connected with Dr Kinglake's practice, what he has said of the use of cold-water in this disease. The use of cold water as a drink, he represents as of acknowledged efficacy in allaying the violent pains of a fit of gout, as well as in moderating the thirst and heat, which are sometimes insupportable. Rondelet seems to have been the first to consider this treatment as of specific utility in this disease. Vander Heyde says, that there is no remedy more powerful in preventing an attack, or curing it after it has commenced. Although our author thinks this eulogium exaggerated, he has himself often experienced the best effects from this remedy, and is of opinion that Vogel has with justice recommended it. However, there are limitations to the use of cold water as a drink in this disease, which have not been sufficiently determined. When the thirst and fever are strong, he thinks it may suddenly check the salutary efforts of nature; which has induced Musgrave to say, too generally, that it is always rash and dangerous.

Hippocrates says, that cold water, freely poured upon gouty swellings of the joints, allays the pain, by producing a moderate degree of numbness.

Galen has confirmed this opinion; but, from the principles of this practice not having been determined, it has been too generally condemned by some, as De Gorter, and recommended by others, as Cocchi. Our author therefore endeavours to supply this defect;

fect; but we think without success. The following facts are more important.—Loubet, in a paroxysm of gout, having his feet affected with erysipelas, was induced, by the agony he suffered, to immerse his feet and legs in cold water, until it became temperate. After having dried them, he went to bed, and slept soundly. On awaking, he continued to perspire profusely for more than fifteen hours, when he found himself relieved; and next day walked without any pain. Pechlin relates, that he knew a gouty man, who got rid of his pains by rubbing his feet with snow, and afterwards walking on the snow. Musgrave has also observed, that the immersion of the feet in cold water, although very often pernicious in a fit of gout, in several individuals had the effect of speedily removing it.

As a preventive of gout, the external application of cold water has been long recommended. The waters of the Cydnus, which are remarkably cold, are celebrated in Strabo for their good effects in gout, and the ligamentous swellings of domestic animals. Pliny also quotes a letter of Cassius of Parma to Mark Antony, on the use of the waters of the Cydnus in gout. Antonius Musa cured Augustus of extreme emaciation, the consequence of gout, by cold bathing and cold drink. Stoll advises the body to be sponged every morning with cold water: Grant says, that walking in cold water is the most useful of all exercises: and Williams recommends immersion for about half a minute in cold water, succeeded by friction and exercise, for the radical cure of gout. 'Upon the whole,' says our author, 'it is impossible to deny the good effects which immersion for a short time in cold water, succeeded by moderate exercise, has in exciting the powers of the constitution in many individuals subject to gout; provided,' he cautiously adds, 'this immersion be employed in favourable circumstances, and combined with an appropriate strengthening diet.'

VII.

An Improved Method of treating Strictures in the Urethra. By Thomas Whately, Member of the Royal College of Surgeons in London. 8vo. London, 1804.

MR WHATELY claims the merit of having opposed, what he deems, the dangerous practice of Mr Home; and though his observations on that practice have been for some time before the public, it does not appear that they have procured him the expected

pected honour of a reply from his adversary, who, equally convinced of the safety and efficacy of his method, continues to wield his formidable bougie, and to inform the world of his uninterrupted victories.

Mr Whately, too, has mounted his hobby. He started, it seems, a friend to the lunar caustic; but he was determined to improve, or at least to add something new to the practice, which he did by coating the extremity of the bougie with the $\frac{1}{2}$ or $\frac{1}{4}$ part of a grain of powdered caustic mixed up with thick mucilage of Gum Arabic; and this appears to have answered his purpose very well, till he had the good fortune 'to discover a more efficacious, and at the same time a less painful and hazardous remedy for the disease in question;' in a word, to substitute one caustic for another, the *kali purum* for the lunar caustic. The pretensions of this innovation are indeed very high; but those who are aware of the fond partiality of discoverers and improvers for their own offspring, and who know that innovation does not always imply improvement, will have their doubts, and, till more general experience have pronounced judgment, will be disposed to question the principles on which the practice of Mr Whately is founded.

The *modus operandi* of Mr Home's bougie is clear and intelligible, and its good as well as bad effects are easily deduced from its powers. As a caustic applied to a sensible and vascular membrane, it must occasion pain, and sometimes hæmorrhagy, and, while it destroys the stricture, it must produce a slough. The simple bougie cures by dilating the stricture, the caustic by destroying it, and the pain and slough are the necessary effects of its operation, hæmorrhagy sometimes an accessory one. But though these effects are implied in the destruction of a part by caustic, we believe that, in this particular instance, they have been magnified somewhat beyond the truth. The pain is less and of shorter duration than might have been expected; the sloughing is generally trifling, sometimes altogether unobserved; the hæmorrhagy, sometimes indeed profuse, is yet an accident which has followed the slightest violence done to the diseased urethra by the most simple bougie. Alarming consequences indeed may have been observed from a rash, injudicious, or unskilful application of the armed bougie; but what active remedy is safer in the hands of ignorance or temerity? The lunar caustic, however, is here represented as fraught with unavoidable danger, from the horrid pain, sloughing, and profuse hæmorrhagies, not to mention the false passages and breaches made in the urethra, and which, by the by, have been formed by the simple as well as by the armed bougie. But the *kali purum* employed à la Whately is free from all these accidents; and while, in point of efficacy, it is asserted to be superior to all

other methods, it gives but little pain, and is followed neither by slough nor hæmorrhagy !

Our readers, who are not acquainted with the method of applying the kali purum, will be disposed to wonder at the singular efficacy and mild operation of a caustic, which, from their knowledge of its deliquescent and unmanageable nature, they would have condemned unheard, or considered at least as far more dangerous than the nitrat of silver in the treatment of strictures in the urethra. It is necessary, therefore, to give some account of Mr Whately's bougie, and of his manner of employing it. A bougie being chosen just large enough to enter the strictured part, a small hole, about the sixteenth part of an inch deep, is made at the extremity of its rounded end, by means of a blanket-pin ; a piece of kali purum, less than half the size of the smallest pin's head, is then introduced, and sunk a little below the margin of this hole, which, to prevent the escape of the kali, is afterwards a little contracted by the fingers, and then filled up with hog's lard, to prevent the caustic from acting on the sound part of the urethra, as the bougie passes to the stricture.

‘ Let the bougie be oiled when it is completely prepared for the office it has to perform. Then let the operator, without delay, pass it by a very gentle motion, with the curvature upwards, to the anterior part of the stricture, upon which the caustic is to be applied. In doing this, the end of the bougie that is held by the finger and thumb should be a good deal inclined towards the abdomen, on its first introduction into the urethra, in order to preserve the curvature of the bougie. After it has passed about five inches, this end should be gradually brought downwards, as the bougie passes on, till it forms a right angle with the body. It will be known when the bougie arrives at the stricture by the resistance to its progress felt by the hand of the operator.

‘ When the bougie has reached the anterior part of the stricture, it should rest there for a few seconds, that the caustic may begin to dissolve. It should then be pushed very gently forward, about one eighth of an inch ; after which there should be another pause for a second or two. The bougie should then be carried forward in the same gentle manner, till it has got through the stricture. The sense of feeling will generally inform the operator when it has proceeded so far.

‘ When the caustic bougie has passed through a stricture, it should be immediately withdrawn, by a very gentle motion, to the part at which it was first made to rest a while ; after which, it should be passed very slowly through the stricture a second time, but without letting the bougie stop in its passage. If the patient complain of pain, or if he be faint, which last effect sometimes, though

though rarely, attends the first operation, the bougie should be immediately withdrawn; but if these effects are not produced, we may repeat the operation of passing and withdrawing the bougie through the stricture once or twice more before we finish the operation, which will take up in the whole about two minutes.

‘ At the expiration of seven days, the application of the caustic should be repeated in the same manner. If the first application should have enlarged the aperture of the stricture, which may be known by passing a bougie through it, of the same size as that by which the caustic was conveyed, the bougie used in the second operation should be a size larger than the one used in the first, taking care, however, that this be not too large to pass through the stricture.’

We have thus quoted as much of Mr Whately’s description as may enable our readers to understand the construction and application of his bougie. At the end of seven days more, he directs a third application to be made, and so on, gradually enlarging the bougie as the stricture dilates. The quantity of caustic also may be occasionally increased; and to prevent misapprehension, the quantities to be used are represented by three dots of different sizes, thus, . . .—twelve of the largest of which weigh one grain.

It may now be asked, how these minute portions of potash, secretly enclosed in the extremity of the bougie, are supposed to act upon the stricture? If as a caustic, it will be difficult to assign the peculiar advantages of the innovation. But the object of Mr Whately is very different: the intention of his practice is to render the *kali purum* safe and mild, so that, as when properly diluted it may be received into the stomach without danger, it may be applied also to the strictured urethra without producing slough, considerable hæmorrhagy, or the other accidents which follow the application of the nitrat of silver. But we shall here venture one general remark with regard to the use of caustic.—If its operation can be confined to the part intended to be destroyed, the more active the caustic is the better; the irritation and risk will be less in proportion to its activity. If the caustic is sufficiently powerful to destroy the part to which it is applied, its action is limited to that part; if less powerful, it irritates, stimulates, and inflames to an unassignable extent, and increases the symptoms it was intended to relieve. Our object, therefore, in the application of caustic, is not to diminish its power, but to limit and confine its action. The *kali purum*, however, Mr Whately conceives to be slowly dissolved, to form a sort of animal soap, which being diffused by the bougie over every part of the stricture, *abrades* the obstructing membrane without producing a slough. Thus by its property

property of combining with oily substances and animal mucilages, and forming a soap, the *kali purum*, he assures us, is greatly superior to the lunar caustic; it acts more powerfully on the stricture, gives less pain, is more capable of having its action confined to the contracted part, and irritates less after it has been applied. To us, these advantages seem in a great degree irreconcilable. Far from being satisfied with this theory of chemical filing and abrasion of the strictured part, we still suspect, that whatever tends to weaken the action of the caustic, will at the same time destroy or lessen its effects on the stricture. If Mr Whately's statement be accurate, we would consider his bougie as differing little from the most simple, which operate by dilating, and perhaps by promoting the absorption of the strictured surface: it is a medicated bougie, which would be better and safer, without the quackery of the animal soap. Surely, if Mr Whately's bougie gives so little sense of burning and of pain, if it occasions no slough or hæmorrhagy, it cannot be said to destroy the stricture as a caustic; if its use is never followed by rigors, by intermittent paroxysms, by delirium, &c. it is indeed free from consequences which we would devoutly wish to avoid, but which have been excited by the simplest bougies, as well as by the caustic of Mr Home. But if Mr Whately's bougie possess the powers of a caustic, if as such it be capable of destroying the stricture, we cannot conceive how its action should be more confined to the strictured part than the armed bougie of Mr Home. From the way in which this last bougie is armed, the caustic is made to act directly on the anterior part of the stricture; if properly applied, its action is confined to that part, and no other part of the urethra is injured, either in introducing or withdrawing it. But Mr Whately's bougie is passed within and beyond the stricture, on the sides and whole surface of which it is intended to act. The caustic, indeed, is curiously concealed in its extremity, and therefore cannot produce any effect on its first introduction; but being passed within the stricture, where the caustic is supposed to dissolve, and to distil from the pin-hole in the extremity of the bougie, which is now moved upwards and downwards, the liquid caustic is applied by the shoulders and circumference of the instrument to the sides of the strictured part. Now, in this way, the lower part of the bougie, to the extent at least of the motion given, will be imbued with the caustic solution, so that it must be impossible to confine it to the stricture during the operation; and in withdrawing the bougie, the whole membrane of the urethra will be exposed to injury.

But granting every other advantage to Mr Whately's method, it is evident, and indeed it appears from his own account, that the

the kali purum is not so extensively applicable as the lunar caustic; that its use is limited to those cases of stricture which admit the bougie to be passed through them, and which, for the most part, will yield to the unarmed bougie itself; while the lunar caustic is preferred in the more complicated cases, where the stricture can be attacked on the anterior surface only; that is, in all those cases which do not so readily yield to the milder method of dilatation by the simple bougie, and which perhaps alone demand the more hazardous treatment by the caustic. And here, we would enter our protest against that general and indiscriminate use of caustic in the treatment of strictures in the urethra, which has been adopted by some surgeons, and recommended to the imitation of others. We would remind those, that by far the greater number of cases of stricture may be subdued by the simple bougie; that it continues to maintain its reputation with the best surgeons; and that, in spite of the quackery of the times, and the clamours of interested faction, it must still be considered, not only as the safest remedy in this disease, but as one of great efficacy, and as the best adapted for general practice. It should always be had recourse to in the first instance. The bougie, armed with caustic, should be kept as a remedy of reserve, to be employed in those more difficult and complicated cases, in which the former has failed, or to which it is inapplicable.

Mr Home, we may observe, in displaying the advantages of the caustic, has not concealed its dangers; and, in the history of his cases, he has not omitted the accidents which occurred, and embarrassed, or interrupted the cure. These were to be expected; but it is from the average success of the practice that he has drawn his general conclusions. These accidents, however, form the great objections which are urged against his method by Mr Whately. One general result, indeed, of great importance, is challenged by Mr Whately. Mr Home assures us, 'that the parts recover themselves after the use of the caustic, and acquire the natural smooth surface they originally possessed in common with the rest of the urethra:—' That removing the stricture restores the parts to all their natural functions.'

Mr Whately maintains the very contrary of this assertion. 'There is,' he tells us, 'another serious effect of Mr Home's mode of treating strictures, which is but little known, except to the individuals who have been under this treatment. What I here refer to is, that the caustic, when repeatedly applied to the same stricture, does irreparable mischief to the contiguous part of the urethra. Whether the bougie be eventually passed through the stricture, or whether the surgeon, at length despairing of success, desist from any further attempt, the subsequent effect is nearly the

the same: the inner membrane of the urethra being repeatedly injured, fresh contractions frequently take place in a short time after the caustic is left off, and the parts are cicatrized and left to themselves; which being generally of an irregular kind, the strictured part degenerates into a worse state than ever. I have had opportunities of observing the effects of this mode of treatment in many of Mr Home's patients; and I can truly say, that I have met with no cases so obstinate and unmanageable as these: Several of them I have found to be incurable; as either no passage could be procured for the bougie into the bladder, or, if passed, yet the stricture proved so rigid, that it could not be dilated.'

If Mr Whately's conclusion be the true one, it would prove an irrefragable objection to the use of the caustic. Mr Home's practice in this disease is very great; he has a reputation to support, a character he would not surely endanger by the public assertion of what every one of his numerous patients might so easily contradict: and we think it becomes him to examine, and to expose the grounds of Mr Whately's allegation.

Though the professed purposes of Mr Whately's publication be, to expose the dangers of Mr Home's practice, and to recommend his own method to the imitation of surgeons, he has taken occasion to offer a few general remarks on the nature of strictures, and to give some judicious directions for the introduction and management of bougies. Instead of introducing the bougie in the usual manner, he particularly recommends that it be bent and adapted to the curvature of the urethra, by which its passage is greatly facilitated.

The cases, which are added, of strictures cured by the *kali purum*, convey little more information than what is asserted by Mr Whately in the text, of the efficacy and mild operation of the caustic. They are so uncircumstantially related, and so much resemble each other in the few details which are given, that any one might stand for the whole.

These cases, however, Mr Whately thinks, clearly show the surprising effects of caustic in this disease, and its perfect safety when administered with judgement. He is particularly anxious that these reports be compared with those published by Mr Home. — 'The greater number of his cases are filled with accounts of the violent and dreadful effects of his method of treatment, not merely on the urethra itself, but on the system in general. These cases, on the contrary, show the genuine effect of a powerful remedy, applied in a suitable quantity, and at proper periods, to the diseased surface of a stricture; which, like all other remedies of great efficacy, when thus employed in many other diseases, tends to abate and moderate their symptoms, rather than produce

duce fresh ones, or increase those from which the patient already suffers.'

The cure, he assures us, has been permanent in all these cases; and so little pain or inconveniency was generally felt from the kali purum applied in his way, that he does not recollect a single instance of a patient being confined, even for a day, in consequence of its application. The patient, in almost every case, went abroad as usual: and this he attributes entirely to the *small quantity* of caustic employed, and to the other directions given for conducting its application.

VIII.

Morborum Puerilium Epitome. Auctore Gulielmo Heberden, Regi Reginæque Britanniarum Medico Extraordinario. 8vo. pp. 72. Londini. 1804.

IN this little classical treatise, Dr Heberden has given a very perspicuous and sensible epitome of what is generally known with regard to the diseases of children, as well as a judicious account of the diet and regimen, which should be attended to, with a view to the prevention of disease. The reason, however, which induced the learned author to believe that such an epitome was a desideratum in the profession, does not appear to us very cogent or satisfactory. It is, that the best writers have somehow neglected this department of practice: '*Quam medicinæ partem nescio cur scriptores optimi videntur præterisse, et quasi infra se positam despexisse.*' Yet, with some little inconsistency, he informs us, that his work is '*minutum sanè, et exile, in quo nihil fere quod non dictum ab aliis, plurima etiam trita invenies.*' And we fear, indeed, that this latter observation is nearest the truth. The author's precepts are generally judicious; and he has proscribed all those absurdities, which are too often to be found, if not in medical treatises, at least in the practice in the diseases of children. The following is his chapter on squinting.

'*Ubi quis natus est strabo, id vitium permanere solet. Quod si postea inciderit, sæpe potest tolli. Unicum remedium est, oculum sanum per aliquot dies comprimere.*' (p. 38.) The same perspicuous brevity is preserved throughout the work; and the purity and elegance of the style will greatly recommend it to a certain class of readers.

IX.

Samuel Thomas Soemmerring, Abbildungen des menschlichen Auges.
Folio. Frankfurt am Main. 1801. 110 pp. with 8 shaded
and 8 outline plates.

PROFESSOR SOEMMERRING has long been engaged in making preparations for a series of anatomical treatises on the organs of the senses. As introductory to these, and as a specimen of the manner in which the work was to be executed, he some time ago published his inimitable plate of the basis of the brain and origin of the nerves. In pursuance of his plan, the magnificent volume now before us is dedicated to the anatomy of the human eye; on which subject it is unquestionably the most complete and accurate work yet published. We must however regret, that he has not rendered it still more useful and more interesting, by relieving the dryness of mere anatomical description, by the introduction of the physiology, and even the pathology, of this important organ. We must also regret, that the text and explanation of the plates, which will be studied and referred to as standards by the anatomists of every nation in Europe, are written in a language so little understood in other countries as the German.* The enormous expence of the work might also be urged as an objection to its general utility; but our author's object was to surpass his predecessors in every particular, and we can easily pardon a little luxury in a publication which explains so difficult a subject in so masterly a manner. Besides, there is not the least doubt that the plates will be immediately copied by anatomical compilers, and that the improvements they contain will be widely circulated, so far at least as can be done by less exquisite engravings.

The first plate contains, front and profile views of the eye, in the male, in the female, in the Negro, in the Albino, and in a young woman asleep, admirably drawn from life. Indeed, they have nothing of the coldness and harshness of death. To artists they must form invaluable studies, if, as Professor Soemmerring assures us, there is scarcely to be found, even in the works of the greatest masters, an accurate representation of this most expressive part of the human countenance. In the text belonging to this plate, our author describes minutely the external difference between the eye of the male and of the female, of the European and of the Negro, and of the European and of the Albino, and explains the situation of the eye-lids during sleep. In his comparison of the eye-lids of the male and of the female, he introduces
some

* Since the first edition of this Review was published, we have seen a copy of the plates, with the text in Latin, entitled, 'Icones oculi humani.'

some physiological observations on the texture of the *film* in the two sexes, and the manner in which its functions are affected by it, which he considers as new and interesting, but which are entirely hypothetical, and evidently misplaced.

The second plate represents every thing connected with the eyelids, the orbicular muscle, nerves, arteries, veins, lacrymal gland, points, and sac, &c.

The third plate gives an accurate and distinct view of the basis of the bony orbit, of the muscles moving the eye, and of the nerves belonging to these muscles.

The fourth plate shews the distribution of the ocular artery, the junction of the veins which come from the different parts of the eye, and the relative size, form, and anterior termination of the four recti muscles. In the distribution of the ocular artery, Professor Soemmerring has pointed out some peculiarities, in all of which it bears a striking analogy to the carotid; but these are by no means peculiar to the ocular artery, but common to all the internal branches of the carotid.

The fifth plate is of very great importance, as it represents the internal structure of the eye-ball. The anatomical preparations for this plate were attended with very great difficulties, but seem to have at last been entirely overcome, and brought to a very great degree of perfection by the dexterity and perseverance of Professor Soemmerring. In the first place, the eye alters so quickly after death, by the evaporation of the aqueous humour, that it is only met with in a natural state, when the eyes have closed spontaneously at the moment of death. It is next extremely difficult to take it out of the orbit without injuring it in some way or other. Lastly, it is absolutely impossible to make any section of it, without deranging its structure more or less. Divided in the air, it becomes mis-shaped by its own weight; in water, the coats become thickened, and roll up; and in alcohol, they lose their transparency. When previously frozen, some part or other always bursts. Professor Soemmerring tried, in vain, every expedient he could think of, to lay before his artist preparations which should represent the parts as they exist in the living body; and as he did not think himself justified in presenting to the public delineations as anatomically correct, in which there were obvious inaccuracies, and undeniable derangements from the natural form, he endeavoured to correct these, by comparing preparations made in various ways, and by estimating the extent of the error. Our author's delineations differ, therefore, frequently from those of his predecessors, and also from the preparations found in most museums; but he contends, that his approach nearer to nature and truth. The first and second figures represent the anterior and posterior half of the eye, divided vertically; the third, the lower half

half of the eye divided horizontally; the fourth, fifth, and sixth, the posterior, anterior, and side view of an eye, from which the sclerotic and choroid coats have been removed, so as to leave the retina entire. There are thirteen other figures on this plate; but it is obvious what they are intended to represent.

In these figures we may notice the following peculiarities. The general form of the eye is more natural. The iris is always represented perfectly flat, not arched in the smallest degree. In the very centre of the retina, there is a small hole, surrounded with a golden yellow border. Professor Soemmerring attributes his discovery of this appearance to the examination of the eyes of a young man recently drowned, which were therefore unaltered by evaporation from their surface, or by mechanical pressure. It is not seen on making a common section of the eye, because the retina, when divided, forms exactly at that place several folds which conceal it, and which have been represented as natural to it, although they only originate from the want of the usual distension. This he alleges as the probable reason why it remained so long unnoticed. The retina terminates at a short distance from the ciliary processes. As this is a disputed point, it is interesting to know the opinion of so great an authority as Professor Soemmerring concerning it. 'To enable me to ascertain with certainty, that the retina terminates here, and does not extend to the capsule of the crystalline lens, and still less cover it, I have very frequently examined the human eye with the greatest care, and had it examined by my most able pupils. In eyes sufficiently fresh, it is so evident, that it does not admit of doubt. But if the eyes have lain for some time in alcohol before they are examined, the ring between the termination of the retina and the crystalline lens becomes opaque and whitish, so as to appear a continuation of the retina, which is naturally opaque and whitish, but which, by the action of the alcohol, becomes proportionally more opaque and whiter. A still more convincing proof that this is the real termination of the retina, is afforded by the circumstance, that if an eye from which the sclerotic and choroid coats have been removed, be suspended for a length of time in alcohol, the retina begins to separate at this place from the vitreous humour; and in this case, the separation does not only take place exactly in this circle, but its edge is so smooth, clean, and sharp, that no art could imitate it.' Although these arguments seem to decide the question, and some of the facts are correctly stated, yet even in fresh eyes, both of man and other animals, on washing away carefully the *pigmentum nigrum* with a hair-pencil, the retina appears to be continued forwards to the edge of the crystalline lens. Besides, the anterior portion of the retina is firmly attached, while the posterior is only in close contact with the choroid coat, which not only causes

causes some difference of appearance, but determines the line at which it separates, on being suspended in alcohol. * Professor Soemmerring has also accurately delineated the change of form which the crystalline lens undergoes in the progress of life. After birth, it increases considerably in circumference, but little if at all in breadth; so that it gradually becomes less spherical, and more lenticular in shape. The four last figures represent the segments, coats, and fibres into which the lens may be divided, after it has been coagulated by alcohol. But these appearances, Professor Soemmerring, with justice, considers as merely effects of the coagulation, and by no means illustrative of the texture of the lens in the living body. The figures contained in this plate, are considered by our author as of so much importance, that he has given them in three different states; in outline, highly finished, and coloured.

The sixth plate contains magnified views of the size, form, distribution, &c. of the blood-vessels of the iris, choroid coat, retina, pupillary membrane, and capsule of the lens.

The seventh plate is principally intended to give distinct and complete views of a well-formed orbit, along with the arteries of the roof of the orbit, the situation of the lacrymal gland, the real structure of the pulley for the tendon of the trochlearis muscle of the eye, and the corrugator supercilii.

The eighth and last table is both original and important. It contains a vertical section of the eye *in situ*, in which ever part of the organ of vision is represented in its natural relative situation. The first figure has undergone no farther preparation, and the eyelids are represented as closed. In the second, the eyelids are open, and various parts are removed, that others may be seen. The third figure is merely an external view of the eye in profile, to correspond with the second. But the last is a most excellent magnified outline of the first, which forms one of the most instructive views of the eye ever published.

Upon the whole, this work will add to the anatomical reputation of Professor Soemmerring, and will be referred to by every one desirous of making himself perfectly master of the structure of this delicate and important organ. We trust that the indefatigable author will be encouraged to proceed with his plan, and that he may be enabled to develop the anatomy of the other or-

VOL. I. NO. II.

P

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* In different preparations in Dr Monro's Museum, the human retina is seen unequivocally continued forwards to the edge of the lens, becoming imperceptibly attenuated. In the eagle's eye it distinctly lines the ciliary processes; but in the bullock's eye it seems to terminate at the beginning of these processes, becoming decidedly and suddenly thinner.

gans of our senses, with the same accuracy and elegance which distinguish the present treatise.

X.

Continuation of an Account of a peculiar Arrangement in the Arteries distributed on the Muscles of slow-moving Animals, &c. By Mr Anthony Carlisle. See Philosophical Transactions for 1804, p. 17.

THE account, of which this is the continuation, was published in the Philosophical Transactions for 1800. The subject is highly interesting, and the commencement of its investigation by Mr Carlisle is promising. We must, however, consider it only as the commencement; for many more facts must be collected, before any satisfactory conclusions can be drawn.

Mr Carlisle's principal discovery, is that of a peculiarity in the distribution of the arteries to the limbs of several slow-moving animals, the *lemur tardigradus*, *lemur loris*, *bradypus tridactylus*, and *bradypus didactylus*. In all of these, the arteries distributed to the slow-moving muscles, instead of being arborescent, are suddenly divided, at their entrance into the upper and lower limbs, into a number of equal-sized cylinders, which occasionally anastomose with each other. They are exclusively distributed on the muscles of the limbs; whilst the arteries sent to all the other parts of the body, even to muscles whose motion is not unusually slow, as those of the neck and head, and also those arteries of the limbs which are employed upon substances not muscular, divide in the usual arborescent form.

'In all the quadrupeds before mentioned, the other blood-vessels, as well as the nerves, presented the common appearances. The size of the heads, and the interior capacity of the skulls, both in the *bradypus tridactylus* and the *lemur tardigradus*, seemed smaller in proportion than is usual among animals, so that the quantity of brain must be less than ordinary.'

This curious fact has given rise to the following ingenious reasonings from Mr Carlisle.

'The effect of this peculiar disposition of the arteries, in the limbs of these slow-moving quadrupeds, will be that of retarding the velocity of the blood. It is well known, and has been explained by various writers, that the blood moves quicker in the arteries near the heart, than in the remote branches; and also, that fluids move more rapidly through tubes which branch off suddenly from large trunks, than if they had been propelled for a considerable distance through small-sized cylinders; besides which,

the

the frequent communications in the cylinders of the *bradypus tridactylus* must produce eddies, which will retard the progress of the fluid. From these, and a variety of other facts, which it is not necessary to specify, it will appear, that one effect upon the animal economy, connected with this arrangement of vessels, must be, that of diminishing the velocity of the blood passing into the muscles of the limbs. It may be difficult to determine, whether the slow movement of the blood sent to these muscles be a subordinate convenience to other primary causes of their slow contraction, or whether it be of itself the immediate and principal cause. The facts at present ascertained, relative to muscular motion, do not authorise me to treat decidedly of the share which the vascular system holds in the operation of muscular contraction. Certain it is, that a larger proportion of arteries is sent to the muscles of quadrupeds, than to the ordinary substances; and the extreme redness of these organs shews that their capillaries are of large diameter. A greater degree of redness is also observable in those muscles (of the same animal) which are most frequently called into action. The habits of life among the tardigrade animals give occasion for the long continued contraction of some muscles in their limbs: these creatures are represented clinging to the boughs of trees, and remaining thus, without locomotion, for several hours. The powers which require so long a time to determine the contraction of a series of muscles, are probably no less slow in restoring the parts to their former condition; or, if the restoration is to be effected by antagonist muscles under the same circumstances, then the flexion and extension of every part of the limbs will correspond, as to time.

In the continuation, Mr Carlisle gives an account of the facts which have occurred to him in the further prosecution of his subject. The examination of the distribution of the arteries to the masseter, pterygoid, and temporal muscles of the ruminating and carnivorous animals, did not afford the evidence he expected, as it is arborescent. The rete mirabile in these animals, and the circuitous course of all the arteries going to the human brain, and their confinement in bony passages, seem intended to retard the velocity of the motion of the blood. The spermatie arteries are the longest arterial cylinders in the body; and the slow action of the muscles supplied by them, and their occasional long continuance in a contracted state, are well known. The next in resemblance are the intercostal and diaphragmatic arteries. The circuitous course of the arteries which supply the iris in man is remarkable. The tails of animals, when they are prehensile, are supplied by one cylindrical artery. The swimming-bladders of some fishes also afford examples of cylindrical arteries supplying

slow-moving muscles. The intestinum ileum of the *Cavia Agouti* of some other animals, shew a remarkable extension of undivided arteries. As an instance of an opposite arrangement, Mr Carlisle quotes the heart, a muscle whose motions are more rapid, and whose arteries are more quickly subdivided, than those of any other.

XI.

Practical Observations on Insanity, in which some Suggestions are offered towards an improved Mode of treating Diseases of the Mind, and some Rules proposed, which it is hoped may lead to a more humane and successful Method of Cure; to which are subjoined, Remarks on Medical Jurisprudence, as connected with diseased Intellect. By Joseph Macon Cox, M. D. Fishponds, near Bristol. 8vo. London, 1804. pp. 166.

OUR attention was naturally attracted by the notice of a new Treatise on Insanity. We flattered ourselves, that a man of a liberal education, sensible of the progress which physical and moral sciences are daily making around him, and furnished with the materials of many years experience, would have proved an author equally instructive and beneficial to the public. We are sorry, however, to say, that the writer of the present tract is but a lamentable instance, either of the impossibility of writing any thing satisfactory on this subject, or, what may be still more reasonably presumed, of the propensity in some men to choose inadequate means to attain a very good object. Dr Cox is physician to a private house for the reception of lunatics; and however successful he may have been in his practice, he probably has thought, that a publication on Insanity would be no disparagement to his character, nor to an institution which depends entirely for its support on the good opinion of the public. It is not surprising that he should have yielded to so strong a temptation, however much it may be lamented that it should have induced him to hazard thereby his reputation. Many men, who are well fitted for active life, scarcely know the principles upon which they act; whoever, therefore, should, from the simple perusal of the book now under review, suspect the capacity of the author, as a superintending manager of lunatics, might possibly be very much in the wrong. A good deal of ingenuity appears now and then in his practical observations; and the facts adduced in illustration of his principles are

are indeed so happily chosen, that they will certainly excite doubts in those who are sceptical concerning the authenticity of medical cases in general. The *Fishponds Asylum* is, as far as our information goes, and from what we can discover in these practical observations, upon as good a footing as most of those private houses are now in this country.

It is but equitable to state, that the author seems fully sensible of his need of that indulgence, which is readily granted whenever it is claimed with sincerity. In this respect, his first and last pages are in his favour. Why then has he treated preceding writers with such neglect, that the names of Hallam, of Ferriar, and of Pinel, are nowhere to be found in his book? Has Dr Cox been so remiss as not to consult those recent authorities, or so confident as to be tempted to slight them all, when put in competition with his own?

In the history of a *maniacal attack*, the author remarks, that the approach of mental alienation is generally very gradual; that it is at first only observable in a change of accustomed habits, disposition, taste, and pursuits, and in a number of irregular actions of the nervous system, in consequence of which the powers of some parts are considerably increased, while those of others are proportionately depressed. Now, we are decidedly of opinion, that a debauchee, who should be ashamed, or only weary, of his former course of life, and should be willing to change his habits of gaiety and dissipation for the sober walks of virtue and mental improvement, might acquire a new taste and a new disposition of mind, without any chance of being thought mad by his friends; he might even become subject, in consequence of his sedentary pursuits, to some degree of hypochondriasis, without ceasing to deserve a place in the numerous tribe of rational beings. What becomes, then, of the characteristic features of madness, since, on some occasions, they claim our esteem and admiration? There is much reason to suspect, that madness, irrationality, ignorance, obstinacy, &c. are sister qualities; so that we should most readily call a man mad for reasoning and acting differently from ourselves, if he could not find a certain number of persons inclined to reason and to act in the same manner with himself, and who can thus support the grounds of his conduct. A natural philosopher meets a stone-cutter, and tells him that his chisel never touches the stone which it breaks into a thousand pieces. His statement will be approved of by men of the same standard of intellect with himself; but he will necessarily be laughed at and be thought mad by others, because they neither know nor can conceive any possible way of cutting a stone without touching it. The incessant testimony of their senses convinces them they are in the right;

and whoever wishes to persuade them that they are in the wrong, is by them considered ignorant, presumptuous, or mad, according as they believe him to be in other respects their inferior, their superior, or their equal in knowledge. The truth is, that any train of thought, or any line of conduct to which we are not accustomed, and the grounds of which we cannot comprehend, shocks our understanding; and unless we implicitly acknowledge our mental inferiority, we must think our opponent unacquainted with the subject, and moreover incapable of perceiving truth and propriety, when presented to him in the plainest manner. It is a peculiar species of relative ignorance, to which, for want of a more satisfactory expression, we give the name of Madness or Insanity. Such is the elementary notion of madness, and the standard to which must be referred any dispute respecting the rationality or irrationality of our ideas and actions. The same principle applies to the consideration of the conduct of an individual, when contrasted with itself in some of its most striking changes and varieties. If no adequate reason for such changes can be found, none at least that is consistent with common experience, we are apt to recur immediately to some obscure cause, expressed by a word equally obscure:—we say, this man's conduct is incomprehensible; he is mad. But if we were to say, that because any man does not act as most men would have acted in his situation, he must therefore have lost his reason, we should condemn alike all virtuous and villanous actions of a higher stamp. The generality of men can as little comprehend true generosity and disinterestedness, as they can explain a sudden change in the intellectual and moral character of their neighbour. If we attempt a distinction between useful, useless, and hurtful kinds of insanity, we only expose, more clearly, that selfishness and ignorance, from which our vulgar notions of madness have been derived. A man may be inconsistent with himself in the whole range of his propensities and dispositions at different periods of his existence; nay, we continually are so in detached parts of our own conduct: the causes of such changes may be discoverable by all men, by a few only, or by none at all, not even by ourselves; and how many of us often act without the consciousness of any motive whatever! The term *madness* is vague, because it is simply relative: in common life, it is most shamefully abused, from its being universally taken in a bad sense, and thus serving the purposes of narrow and illiberal minds, equally impotent in their exertions, and despotic in their judgment: A *history* of Insanity is quite unintelligible to us. We know of various peculiarities in the moral and intellectual character of men; a strong propensity to theft, for example, to falsehood, to sensual indulgence; an inordinate and exclusive attachment to the bustle

bustle of fashionable life ; a passion for poetical effusions ; a consummate patience in the pursuit of dry and abstract studies : these, and many others, may be so many deviations from the plain dictates of reason ; they are generally conceived to be fit subjects for the punishment of a court of justice, the censure of the moralist, the humour of the dramatist, or the amusement of the common observer ; but no body has yet dreamed to give any history of them off the stage, or to confine their victims within the walls of a medical house of correction.

This part of the work before us ends, with some observations on the duration of maniacal paroxysms, and on the probability of their future prevention ; which are so completely out of place here, that our author has with care, though without any mercy for his readers, brought them forth a second time, when he comes to treat of the prognosis.

Under the head of the *predisponent and exciting causes* of insanity, much confusion still prevails. An attempt towards a clear and determinate distinction between them might be useful, if in any degree practicable ; but, with the exception of a few peculiarities of original organization, the various aggregates of which are termed *temperaments*, or constitute an hereditary taint, no line of demarcation can possibly be traced ; and the reason of this is evident. Each of those causes may be first or last in that succession of powers which is adequate to the production of the disease ; and how is it possible to assign a fixed place to causes, which can mutually exchange their period of action, without altering the result ? This remark, although generally applicable to the principles of medical etiology, must appear to bear still more strongly on the different causes of insanity, from the nature of that part of the system in which the malady is chiefly seated. The sanguine and the melancholic temperaments exquisitely marked, are the only ascertained states of the body, which, independently of an hereditary taint, predispose to mental derangement. If this be a fact, supported by common observation, it is no less susceptible of important inferences in the treatment of lunatics. For the very expression of that fact indicates the particular disposition of the nerves in any given case of mental disorder which is consistent with the presence of the disease ; and whenever the nature of the exciting causes is unknown, or their action cannot be abstracted, the morbid association of those causes, at least with a known state of the system, may be destroyed, and some rational plan of treatment devised for the recovery of the patient. An hereditary taint is, on the contrary, little more than a warning of impending danger ; and although it lies, like the other, in the organization, that peculiar state is a latent cause, not likely to form the ground of a regular and systematical practice.

The author next divides the predisponent causes into innate and acquired. Among the first, we find hereditary affections; singularity of temper; a liability to be affected by trifles, and to remain unmoved amidst the most tremendous shocks. The acquired predisponent causes are more numerous:—all intense and exclusive occupations of the mind. Like all actions of the body, they have a natural tendency to weaken and destroy their own productive powers, when persisted in too long, or exercised with an undue degree of energy. The association of ideas is thereby rendered looser and more difficult; confusion of thought arises, accompanied with a restless anxiety, which is sometimes carried to a paroxysm of fury, and usually characterizes this species of lunacy. So various, however, are the degrees of danger attending the separate and exclusive exercise of our different faculties, that Dr Pinel expressly states, as the result of his extensive observation at Bicetre, that almost all his patients owed their mental disorders to the influence of their imagination, applied to different subjects; while not one natural philosopher, and still less a geometerian, was to be found among them. Dr Cox has not been able, in his own practice, to trace the influence of defective systems of education, excessive venery, the influence of the heavenly bodies, in producing mental derangement. But among its causes, he enumerates a habit of intoxication, external heat applied to the naked scalp, original malconformation of the organs more immediately connected with the intellect, intense study, neglected exercise, a sedentary life, certain chemical poisons.

The exciting causes are mental or corporeal. In the first class we find the depressing and exciting passions; religion and love being uppermost among them. We are more inclined to excuse than to praise the good nature of our author, who wishes to persuade, in the most gentle manner, Methodist preachers, that they often mistake lunatics for converts, and that their ministry is better calculated to fill madhouses with its victims, than to benefit the reclaimed. We advise the ingenious Doctor not to waste upon such men his stock of reasoning powers; but whenever they shall come within his reach, to wash and cleanse thoroughly their *primæ viæ* with emetic tartar or the swing, allowing them, at the same time, a good strengthening diet, to restore them to society, with a *mens sana in corpore sano*, the grand requisite for private happiness and social virtue.

The corporeal exciting causes are varied and numerous; their repeated application induces sometimes a predisposition. ‘Excessive venereal indulgences, intoxication, heat, profuse hæmorrhages, previous fever, suppressed evacuations, repelled eruptions, old sores dried up, injuries done to the head, painful protracted parturition, tumours and peculiarity of shape of the parts about
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the brain, are the principal, among many other corporeal causes of mental disease.

On this long enumeration of causes, we must observe, 1st, That whoever will take the trouble of comparing the lists of the predisponent, and of the exciting causes together, will have ample opportunity for ascertaining the truth of our remarks concerning the indistinctness of those scholastic and arbitrary classifications; 2d, That we see no reason for confining the generalization of the principles of action of the exciting causes to such as are called mental only. To speak of these as depressing or stimulating causes, appears to us perfectly correct in a speculative and practical point of view; why then not arrange the corporeal causes under the same general heads? Without such a summary classification; their number will be increased to an indefinite extent; for every individual system is subjected, independently of the more general causes, which act with a greater or less uniformity on the body, to the influence of its own idiosyncrasies, the observation of which is exclusively reserved for the empirical sagacity of the practitioner. To enter into minute particulars on a subject which is not susceptible of sufficient division for practical purposes, is not only tedious in the extreme, but is practising a dangerous deception on the mind of the reader, who relies on the extent of supposed experience, and contracts the habit of passive acquiescence, baneful beyond all measure in the career of medical studies.

The bare mention of a proximate cause in diseases of the nervous system, is still more ridiculous, than to apply that most obscure of all terms to any other affection of the body. We profess ourselves totally ignorant of the meaning attached to the word by most medical authors; and we give full credit to Dr Cox for the following truism: 'The proximate cause of insanity is the actual condition of the system wherein the disease consists.' Change but the word *insanity* for that of any other complaint whatever, and we have at once as complete an explanation of the nature of the proximate cause of them all.

The *Prognosis* in diseases of the mind is peculiarly important, in so far as it may affect the civil rights of the afflicted person, and lay a foundation for a proper classification of the varieties of the disease, applicable to its management and cure. The author has been extremely negligent in the arrangement of his observations on this subject, or rather has totally overlooked the utility of any thing like order and method in the statement of his numerous grounds of judgment. The greater part of them are far from being peculiar to the class of diseases in question, but they evidently apply to all diseased actions of the nervous system. They ought therefore to be recalled by induction to some common points

points of view; such, for example, as the longer or shorter continuance of the disease; its intermittent or continued type; its connexion with a known or unknown, a curable or incurable state of the body; the vivacity or depression of the nervous system connected with the disease.

The result of our author's experience as to the probable termination of mental derangement, is as follows. Hereditary or long continued lunacy; religious insanity; insanity connected with paralysis, hemiplegia, fatuity, or other diseases of this class; insanity preceded by occasional pains in the head, and particularly in the cerebellum; insanity afflicting rich citizens exchanging activity for indolence, (a bounty to industry); are not easily cured. 'Insanity itself (Dr Cox observes) is rarely fatal. When, however, the symptoms of furor are incessant and excessive, accompanied with insensibility to natural and artificial stimuli, with disordered action and appearance of the eyes, a fatal termination may be feared.' It must be remarked, however, that although a chronic and permanent depression of the nervous system supervening to a maniacal state be, in general, a most unfavourable sign, an appearance of stupidity and heaviness, to use the words of Dr Ferriar, when a maniacal fit is going off, is rather a favourable symptom, the length of the lucid interval being generally proportional to the degree of this appearance.

When, on the contrary, the disease has been but of short continuance,—is owing to accidental or obvious causes,—the subjects of hallucination vary,—there are lucid intervals,—the natural disposition is not much changed,—the ideas are of a gay and interesting complexion,—insanity succeeds parturition,—the expression and colour of the countenance change frequently,—the temperament is sanguine,—the infans are timid;—the prognosis is favourable. Dr Ferriar has observed, that those species of insanity in which the temper is more affected than the understanding, are obstinate; and he adds, that as these often happen in persons who seem otherwise perfectly healthy, there is a total want of indication in such cases.

In the *Diagnosis*, Dr Cox begins with an attack on the definition of Dr Cullen, *delirium sine febre*, since pyrexia, as he justly observes, is a frequent attendant on madness. This objection, however, constitutes a strong analogy between insanity and delirium, which nearly the whole of the present chapter is intended in vain to disprove. The observation, that 'it is not every perturbation of mind, not every confusion of thought, that constitutes insanity, even when fever does not exist,' is a new source of uncertainty, which we readily anticipated in our observations on the practicability of a definite history of the maniacal state.

Delirium,

Delirium, according to our author, is in every case a symptom depending on previous acute disease; whereas madness is always a chronic complaint. In delirium, the patient is not conscious of surrounding circumstances, such as his bed, chamber, &c. nor does he know his attendants; while the madman knows every thing about him, but reasons falsely concerning them. In most maniacs, also, there is a peculiar predominant idea, or class of ideas; in delirium, on the contrary, the ideas seem totally unconnected, and no sort of consistency is even observed. As in drunkenness, so in delirium, there are more evident marks of diseased actions of the system, particularly in the vessels about the head, than take place in madness.

Now, to follow this train of reasoning step by step:—If madness be always a chronic disease, what becomes of those single paroxysms that yield readily to medical treatment, never to return? Delirium is not unfrequently the first symptom of an acute disease: insanity, on the other hand, may attend as a symptom, or follow as an effect, of puerperal fever. In delirium, patients are often so well acquainted with surrounding circumstances, that they get up; leave their bed-room, run into the country, and plunge into a stream. It is not a thing uncommon in delirious patients to dwell on some particular subject: whoever, on the contrary, has visited a madhouse, must have heard from its unfortunate inhabitants the most incoherent speeches during the time of their paroxysms. It seems rather surprising that Dr Cox should deduce one of his grounds of distinction from the determination of blood to the head which takes place in delirious patients, when he has expressly stated, in his history of a maniacal attack, that the face of maniacs is sometimes flushed, their eyes prominent and animated.

The diagnosis between mania and hypochondriasis seems equally imperfect.—‘In most cases of the latter complaint, though there exist a peculiar state of mind, a seriousness, gloom, and listlessness to motion, groundless fears, and a most obstinate belief and persuasion of their reality; yet there is no defect of judgement, no injury of the reasoning faculty.’ But if reason and judgement be any thing more than mere words, if they are to regulate our notions of things external and internal, as long as those faculties remain in a sound state, how can groundless fears be accompanied with such an obstinate belief in the reality of their object? How can the affected person attach *bona fide* implicit faith to what appears absurd and ridiculous to every body around him?

The length to which the general observations arising from the nature of the subject has already carried this article; precludes our entering at large upon the consideration of those details of treatment

treatment which are repeated by every succeeding author only with the effect of increasing the size of the book, and of disappointing our eagerness for new information. Some remarks, however, on a few points, which may appear of greater importance, or more strongly illustrated in the present tract, will suffice at present, reserving for another occasion the critical examination of that labyrinth of speculation and practice which bring ridicule on all the theories, and opprobrium on all the modes of treatment that have insanity for their object.

Our author adopts the customary division of the means of cure, into *moral* and *physical*. He seems to be of opinion that it is frequently advisable to humour the whims and wrong notions of the patient; and he relates, in support of this, several cases, among which we shall choose the following as an example of that principle of management.

‘ Mr —, aged 36, of full habit, melancholic temperament, extremely attached to literary pursuits, and subject to depression of spirits without any obvious cause. His lucubrations were sometimes extended through whole nights in succession; and at these periods he was very abstemious, drank only water, and avoided animal food. His friends remonstrated with him on the hazard of such proceedings; and his housekeeper being urgent for his adopting some plan that had his health for the immediate object, the idea struck him of her having some sinister design from her importunities, and that she intended to destroy him by means of a succession of poisoned shirts, under the baneful influence of which he believed himself then suffering. No arguments availed, and all reasoning was lost to prove his mistake; therefore the hallucination was humoured, a suspected shirt was exposed to some simple chemical experiments, continued, repeated, and varied with much ceremony, and the result so contrived as to prove the truth of the patient’s suspicions; the housekeeper, notwithstanding all her protestations of innocence, was served with a pretended warrant, and, in the presence of the patient, hurried out of the house by the proper officers, and secluded from his observation for a time, while he supposed she was in gaol, expecting an ignominious death. After this preface, a formal consultation was held, certain antidotes prescribed; and after a few weeks, he perfectly recovered; a new plan of life and regimen were adopted, and he has ever since continued in a perfect state of health.’

The reader will probably be somewhat surprised at meeting, some pages afterwards, with a rule not very consistent, at first sight, with the preceding one.—‘ It has been a very general, but *erroneous* idea,’ (says the author, p. 49.), ‘ that the subjects of
hallucination

hallucination should be humoured and attended to, in order to dissipate or correct them;—'but such a practice is not only nugatory, but often productive of aggravation of symptoms.' Such downright contradictions excite a sense of disgust; since the smallest degree of regard for himself or his reader might have enabled the writer to avoid them. The only excuse he can plead in his defence, is the apparent difficulty of finding out a reason why, in some cases, one practice does readily succeed, while, in others, it tends only to add new energy to the complaint. Let us take the instance above given, of the man who fancied himself in danger of being poisoned by his maid, because she seemed to interest herself in the recovery of his health. The imaginary notion not being founded on any actual perception, but resting exclusively on some vague and whimsical supposition, common reasoning could be of no avail; and direct opposition would only have strengthened it, by stimulating that spirit of peevishness and suspicion in which the morbid idea originated. Let things therefore follow their natural course, under the wrong supposition of the patient; let his fears and resentment be soothed and quieted by the general sympathy of his attendants, and his belief in the confinement of the offender; let means be adopted by men in which the patient confides, to remedy the ill effects of the poison: his anxiety and suspicions will slowly subside, and with them also the notions arising from those acute feelings; the cure will be effected, in the same way as most other nervous diseases are frequently removed, by physicians who know how to display their professional skill, by adopting implicitly the nosological creed of their patients. If we consider, on the other hand, a case of religious insanity, nothing can lessen the horror of such imaginary feelings. The apprehension and despair under which the wretched being groans, will surely never rouse his languid frame to that degree of spirited confidence which delights in resting on the goodness and generosity of our Almighty Judge: he will continue to see Him through the gloomy medium of terror and despondency. Like the vitiated organ that confounds the bitter with the sweet, the defect lies not in the object perceived, but in that which perceives it. The error cannot be combated by the common course of experience, nor by any direct appeal to the senses: if you assent to the justness of his notions, you can never offer to him any terrestrial consideration, in the way of consolation, that can be equivalent to the loss of salvation. On the plan of speculative opposition, arguments opposed to arguments will go but little way with a mind whose sensibility is at the same time so perverted and so acute, that the two elements of sympathy, resemblance in kind and degree, are here totally absent. Nothing therefore remains, but to employ
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those means which experience has put into our hands, to restore the nervous system to its healthy standard, and regenerate the perceptive powers. The most important, undoubtedly, is the complete abstraction of every aid to those associations which act so strongly as depressing powers on the system at large. In page 41. is given the history of a case of religious insanity, well worthy the attention of the reader.

Dr Cox very properly insists on the utility of a division between *fibenic* and *asthenic* mania, since the physical treatment differs entirely in the two cases. His statement of the characters of each is accurate, and will be perused with advantage. We cannot recommend with equal confidence, the proposal of removing occasionally different parts of the cranium with the trephine, in order to allow more room to its contents, (p. 60.); or the assertion, 'that no plan can be more reasonable, where the vessels are loaded with an obvious determination towards the head, than abstraction of fluids, and a very limited quantity as part of the diet.' (p. 58.) Upon the same principle, indeed, patients in the delirium of fever ought to be deprived of all diluents; because their face is flushed, their eyes suffused, and there exists an increased action of the vessels within the cranium.

Two cases of puerperal mania are related, in which the tonic plan proved successful. The author observes, that in this species of insanity, the ideas have no peculiar character.

Three instances of accidental cures are added. One was the case of a gentleman who recovered from a maniacal state on his receiving from another madman a violent box on the ear. Another of a patient who fell backwards down stairs, fractured his skull, was trephined, and recovered both from the operation and from an inveterate insanity. The third case is still more surprising. The maniac who is the subject of it had been, previous to his confinement, a great rake. In attempting to escape from the madhouse, he bruised his head, fractured his tibia, was confined two months, and was sent home afterwards with his tibia adjusted, his head right, and his moral character thoroughly reformed. Thus the medical art sees its limits enlarged, as usual, through the medium of accidental evils, in restoring sense and virtue to the insane and the wicked.

On the use of Digitalis our author observes, that no case ought to be despaired of in which it has not been tried; and the employment of that valuable medicine persisted in, till some obvious effects have been produced. It is most adviseable in those maniacal states, where there is an increased circulation, without other symptoms of pyrexia; a few drops of the tincture, or half a grain of the powder, are to be given first; and the dose must be gradually

daily increased, till the desired effect is produced. 'I had a patient (he adds) whose system was kept saturated, as it were, with digitalis for weeks in succession, whose mental wanderings seemed regulated by the state of the circulation: when the pulse was at 90, he was constantly furious; at 70, perfectly rational; at 50, melancholic; and at 40, half dead. This man was at length perfectly cured by such a dose of this remedy as kept the pulse pretty uniformly at about 70; and yet he had sometimes taken three drachms of excellent tincture of digitalis three or four days following.' (p. 85.)

Much information may be collected in the present tract concerning the employment of the swing in the treatment of insanity. Our author uses both the oscillatory and rotatory swing, according to circumstances. For the description of those machines we must refer to the book itself, and content ourselves here with a brief statement of the alleged advantages attending their use. Eight cases are related of maniacs who have been indebted to it for their cure, after having resisted other means of treatment. It would appear from these histories, that the vertigo, nausea, vomiting, and other painful sensations which it produces, are useful in checking the irregular associations of living actions, in clearing and shaking different parts of the system; that its effects being considered as very distressing by the patient, the sole idea of its use, after he has experienced it once or twice, may often be employed to bring him to comply with the requests of his attendants. Such means are peculiarly adviseable in cases where torpid insensibility or excitement are very great, and render the usual methods unavailing. The swing, the author assures us, is perfectly safe, no permanent inconvenience having ever, to his knowledge, arisen from its use. Among the cases above alluded to, there is one in which phthisis was arrested by the supervening insanity, and did not recur after the cure of the latter complaint.

The *Appendix* is divided into two parts. 1. The mode of granting Certificates. 2. Medical Jurisprudence in cases of Insanity.

It is a disgrace to the existing laws with regard to certificates, that any man who chooses to call himself a physician, surgeon, or apothecary, however incompetent and unprincipled, should be allowed to furnish these important instruments to the private malice of an enemy, or the barbarous avarice of a relation. It is to be hoped, that the bad effects which might naturally be expected to result from those regulations are greatly checked by the respectable character of the proprietors of lunatic asylums; otherwise it could hardly be supposed that they would have stood so long in a country where civil liberty is so well understood, and so securely guarded against arbitrary attacks. The author seems to regret that

no legal order for confinement can be interposed in cases where men are carrying on the habit of intoxication to such a length as to threaten with utter, though slow destruction, their rational and living powers. We may inform Dr Cox, that such an institution for the moral recovery of drunkards, has actually existed on this side of the Tweed; not however on such a plan as to render it useful to the lower classes of society, among which this baneful habit now more particularly prevails; but confined to such people as could be maintained there at their own expence, till discipline and new habits had reformed their propensities, and restored strength to their frame.

This part of the book is too short to admit of analysis, and too important to be slighted. The reader who thinks that diffidence and caution are the true principles of wisdom, will read over and over again the present Appendix. Sagacity in observing and arranging, in every case, the various elements of maniacal derangement, is not to be subjected to rules; for these elements are susceptible of all possible variations in kind, and in degree. However agreeable it is to substitute praise to censure, we cannot help wondering that the author should have been in the first half of his performance so unequal to what he has shown himself in the last part of it. Here we see in every line the benevolent, judicious, and philosophical physician. His ideas on the uncertainty of the general features of insanity agree so completely with ours, that he will, we trust, excuse our having rectified, in the former part of this review, such of his notions as seemed equally inconsistent with analytical accuracy, and with the import of his own reflections.

Upon the whole, we recommend the present book to the attention of the public, partly as originating in extensive experience, and partly as illustrating some new modes of practice, which may eventually increase our stock of resources against mental alienation. The cases related are, however, presented in too general a manner to enable the reader to deduce from them any conclusion of his own. He must adopt that of the author, which is necessarily a great drawback on their intrinsic value. It were much to be wished, that men whose turn of mind or previous habits are rather averse to method and generalization, could be persuaded that a circumstantial Case-book, supplied with daily reports on the physical and moral state of a limited but well chosen class of patients, and connected with the method of treatment, would become particularly useful in the hands of others. The superintendants of lunatic asylums would thus multiply to a considerable degree the benefits derived from their private experience, by unfolding the errors of the hypothetical theorist, and preparing the way for extensive and solid induction.

PART III.

MEDICAL INTELLIGENCE.

We announce, with much pleasure, the advantageous reform which has lately taken place in the medical department of the Navy; a reform, however, which was no longer an affair of choice, but of urgent necessity.

The service must soon feel the beneficial operation of the new regulations; and, instead of being the scorn of the profession, it will now, we trust, be enabled to secure to itself a fair proportion of medical skill. The invidious and pernicious preference so long shown to the Army, is now done away, as, by these regulations, the medical officers of both departments of the public service are equalized, and encouraged by similar advantages and preferments.

The following are the particulars of his Majesty's Order in Council, of the 23d January 1803, for improving the situation of the medical officers of the Navy, which relate to such officers serving on board ships.

'It is ordered, that the number of assistants heretofore called Surgeons Mates, to be allowed to the surgeons of his Majesty's ships, shall in future be regulated as follows:

First Rate,	-	-	-	-	3	Assistants.
Second Rate,	-	-	-	-	3	ditto.
Third Rate,	-	-	-	-	2	ditto.
Fourth Rate,	-	-	-	-	2	ditto.
Hospital Ships,	-	-	-	-	3	ditto.

And all other ships, entitled, according to }
the existing regulations, to bear Mates, } 1 ditto.

'That no person shall, in future, be appointed to serve as an assistant to the surgeon of any of his Majesty's ships, who shall not have been found qualified, on examination, to serve as surgeon, or as first assistant; that the pay of assistants so qualified, shall be six shillings and sixpence a day, besides the ship's provisions; with half pay, when reduced, at the rate of two shillings per day, provided they shall then have served two years subsequent to the date of this regulation, and three shillings per day, if they shall have served three years from that date. That such assistants shall be required to furnish themselves with such surgical instruments as the commissioners for sick and wounded seamen

shall direct; and that they shall be rated on the ship's books, where the complement admits of more than one, according to their seniority on the list to be kept by the sick and wounded board.

'Whereas there are many surgeons' mates now serving on board his Majesty's ships who have not obtained, and who may not for some time have an opportunity of obtaining the qualification before required; it is directed that such as serve as first or second mates or assistants, shall be allowed five shillings per day, and those rated third mates or assistants, four shillings per day.

'These three classes of assistants shall not be required to provide instruments, nor shall they be allowed half pay, but they shall, nevertheless, on proving themselves duly qualified, be placed on the same list with the other assistants, from the date of the first appointment they may receive after such qualification, and commence the time to be reckoned for half pay from such appointment.

'All surgeons of the Navy, who shall not have served in the whole six years, of which not more than three years time as hospital mate or assistant surgeon shall be allowed, shall receive, when employed, a full pay of ten shillings per day; and, when not employed, a half pay of five shillings per day.

'Surgeons of ships in active service, after having served six years, of which not more than three years time as hospital mate or assistant surgeon shall be allowed, shall be paid eleven shillings per day; their half pay to be six shillings per day.

'After having served ten years, allowing not more than three years as hospital mate or assistant surgeon, the surgeon's full pay shall be augmented to fourteen shillings per day, his half pay to remain at six shillings per day.

'Surgeons of receiving ships, slop ships, convalescent ships, prison ships, and all other ships, except hospital ships employed only in harbour duty, shall be allowed full pay ten shillings per day, with half pay according to the time of their service.

'Surgeons appointed to hospital ships shall receive a full pay of fifteen shillings per day, unless in cases where, by the length of their service, they may have become entitled to a superior rate of payment; their half pay to be regulated, as in the case of surgeons of other ships, by the length of their service.

'Every surgeon in the Navy, excepting surgeons serving on board receiving ships, slop ships, convalescent ships, or any other ships than hospital ships, employed only in harbour duty, shall, after twenty years service on full pay, including not more than three years time as hospital mate or assistant surgeon, be allowed eighteen shillings per day; and, after such length of service,

all

all surgeons, in whatever ships they may have served, shall have a claim to retire on a half pay of six shillings per day; but if the cause of their retirement shall be ill health contracted in the service, and it shall be so certified by the commissioners for sick and wounded seamen, the rate of half pay, on such retirement, after twenty years actual service, shall be ten shillings per day.

Every surgeon in the Navy, after thirty years service on full pay, including not more than three years as hospital mate or assistant surgeon, shall have an unqualified right to retire on half pay, at the rate of fifteen shillings per day.

That medicines and utensils shall be provided for the service of his Majesty's ships and vessels at the expence of Government, in such proportions as shall from time to time be arranged by the commissioners for sick and wounded seamen; but the surgeons shall be required to provide, at their own expence, such surgical instruments as shall be judged necessary by the said commissioners.

No person shall be appointed physician to a fleet or an hospital, who shall not have served as surgeon at least five years; the daily pay of a physician, on his first appointment, to be one guinea; his half pay half a guinea.

When he shall have served three years as physician to a fleet or an hospital, his full pay shall be one guinea and a half per day; his half pay fifteen shillings per day.

The full pay of a physician who shall have served in that capacity more than ten years, shall be two guineas per day; his half pay one guinea per day.

That physicians, when a residence is not provided for them, shall be allowed one guinea per week lodging money.

To the widows of physicians and surgeons, such a pension shall be allowed as the Lords Commissioners of the Admiralty shall think it right to grant.

None of the officers before mentioned, who shall retire from their respective employments without the approbation of the commissioners for sick and wounded seamen, or who shall refuse to serve when called on, if judged capable of service, shall be allowed to receive half pay; nor shall their names remain on the naval list. Their widows will not in consequence be entitled to any pension.

No officer, of whatever description, shall be entitled to any of the advantages arising from this regulation, who shall not have served during the present war, or until he shall have satisfied the commissioners for sick and wounded seamen of his inability to serve; but such persons shall be permitted to remain on the same establishment on which they may now respectively happen to be.

The medical establishment of the *Army* had been previously regulated by an Order of Council of the 22d May 1804, the particulars of which will not be unacceptable to our readers.

‘ I. Hospital mates for general service shall be appointed by commission from us, and shall have the full pay of six shillings and sixpence a day, nett, while employed at home, and of seven shillings and sixpence a day, nett, while employed on foreign stations ; with half pay on reduction, at the rate of two shillings a day, subject to the usual deduction.

‘ The widows of such as shall have served as hospital mates with our land forces abroad, and shall die on full pay, shall be allowed the pension of sixteen pounds per annum : the children of such hospital mates, and the widows and children of those who shall die on half pay, shall be eligible to allowances from the compassionate fund, according to the rules established for the distribution of that bounty.

‘ Hospital mates appointed for temporary and local service, shall not receive commissions, nor be entitled to any of the other above mentioned advantages, but shall remain in all respects on their present footing.

‘ II. The assistant surgeons of our regiments of Dragoon Guards and Dragoons, Foot Guards, and Infantry of the Line, shall, without distinction as to their having served at home or abroad, have the full pay of seven shillings and sixpence a day, nett, with half pay when reduced, at the rate of three shillings a day, subject to the usual deduction. The assistant surgeons of our regiments of Dragoon Guards and Dragoons shall, while on full pay, receive the further allowance of one shilling a day for a horse, as at present.

‘ III. The apothecaries to our forces, and the surgeons attached to the respective recruiting districts in Great Britain, shall continue on their present footing ; the rate of their full pay being ten shillings a day, and that of their half pay five shillings a day, subject to the usual deductions.

‘ IV. The pay borne on the establishment for the surgeons of our regiments of regular infantry, shall be increased to the same rate as that now allowed to the surgeons of cavalry, viz. eleven shillings and fourpence a day, nett : and in the infantry, as well as in the cavalry, the surgeon shall be required to keep a horse at his own expence, to enable him the better to perform his regimental duty. The half pay of regimental surgeons, both of cavalry and infantry, shall be increased to six shillings a day, subject to the usual deductions.

‘ Every regimental surgeon of our regular forces, after seven years service as such, or ten years service with our army in the whole, in a medical capacity, on full pay, shall have his pay augmented

augmented to fourteen shillings and one penny *per diem*, nett, but is not to be entitled on that account to any additional half pay when reduced.

‘ Every regimental surgeon of our regular forces, after twenty years service with our army in the whole, on full pay, shall have his pay augmented to eighteen shillings and tenpence a day, nett, and shall have a claim to retire on half pay at the before mentioned rate of six shillings a day; but if the cause of his retirement be ill health contracted in the service, and shall be so certified by the army medical department, the rate of his half pay on retiring after the above length of service, shall be ten shillings a day, subject to the usual deduction.

‘ Every regimental surgeon of our regular forces, after thirty years service with our army in the whole, on full pay, shall have the unqualified right of retiring on half pay at the rate of fifteen shillings a day, subject to the usual deduction.

‘ The widows of regimental surgeons of our regular forces, permitted to retire after twenty years service on full pay, shall not be precluded from the pension on account of the retirement of their husbands.

‘ The pay of the surgeons of our Militia corps, when embodied, shall be increased, as in the line, to eleven shillings and fourpence a day: and the Militia surgeons shall be under the same obligation to keep a horse.

‘ V. The full pay borne on the establishment for the surgeons to our forces, shall be increased to fifteen shillings a day; and their half pay to six shillings; subject to the usual deductions.

‘ Every surgeon to our forces shall derive the same advantages as a regimental surgeon, from completing the respective terms of twenty and thirty years service on full pay, as above specified.

‘ VI. The physicians, purveyors of hospitals, and deputy purveyors of hospitals, to our forces, shall remain in all respects on the same footing as at present.

‘ VII. The full pay annexed to the appointment of deputy inspector of hospitals to our forces, shall be twenty-five shillings a day, and the half pay twelve shillings and sixpence; subject to the usual deductions. But, after twenty years service with our army in the whole, on full pay, a deputy inspector of hospitals shall have a claim to full pay at the rate of thirty shillings a day, and to half pay at the rate of fifteen shillings a day; subject to the usual deductions.

‘ VIII. The full pay annexed to the appointment of inspector of hospitals shall be two pounds a day, and the half pay one pound a day; subject to the usual deductions.

‘ The several appointments undermentioned, shall be hereafter discontinued in our service, as superfluous and embarrassing,

and holding out the idea of distinctions in rank and duty not easy to be defined, viz,

Field inspector.
 Assistant inspector.
 Deputy inspector general.
 Inspector general.
 Superintendant general.

‘ Given at our Court at Saint James’s, this 22d of May 1804,
 in the 44th year of our reign.

By his Majesty’s command.

W. DUNDAS.’

An Account of the Diseases which have been treated at the Public Dispensary, Carey-Street, from November 30th 1804, to February 28th 1805. By Thomas Bateman, M. D.

ACUTE DISEASES.

	No. of Cases.		No. of Cases.
Tertiana - - - - -	1	Cynanche Tonsillaris - - - - -	8
Scarlatina - - - - -	1	Rheumatismus - - - - -	3
Variola - - - - -	1	Podagra - - - - -	1
Ophthalmia - - - - -	7	Pertussis - - - - -	1
Hydrocephalus - - - - -	2	Hysteritis (<i>post partum</i>) - - - - -	3
Pneumonia - - - - -	10	Febris Infantium - - - - -	5
Catarrhus - - - - -	86		

CHRONIC DISEASES.

	No. of Cases.		No. of Cases.
Hemicrania - - - - -	3	Hysteria - - - - -	3
Cephalæa - - - - -	5	Hæmatemesis - - - - -	1
Hæmoptysis & Phthisis - - - - -	36	Epilepsia - - - - -	1
Chronic Catarrh & Dyspnœa - - - - -	69	Hemiplegia - - - - -	2
Asthma - - - - -	8	Rheumatismus Chronicus - - - - -	37
Dyspepsia - - - - -	39	Lumbago - - - - -	8
Asthénia - - - - -	16	Anasarca - - - - -	2
Icterus - - - - -	1	Hydrothorax - - - - -	3
Hepatitis Chronica - - - - -	3	Ascites - - - - -	3
Enterodynia - - - - -	4	Tympanites - - - - -	1
Verminatio - - - - -	16	Scrofula - - - - -	2
Diarrhœa - - - - -	8	Hæmorrhoids - - - - -	6
Dysenteria - - - - -	1	Impetigo - - - - -	7
Nephralgia - - - - -	3	Scabies - - - - -	7
Dysuria Calculosa - - - - -	2	Psforiasis - - - - -	3
Catarrhus Vesicæ - - - - -	1	Lichen - - - - -	2
Amenorrhœa - - - - -	10	Intertrigo - - - - -	1
Menorrhagia - - - - -	6	Porrigo - - - - -	2
Leucorrhœa - - - - -	5	Aphthæ - - - - -	4

During

During the latter part of December, and a great part of January, the weather was exceedingly cold, with a constant north-east wind, except that there were two sudden vicissitudes, accompanied with rain and a transient thaw. From that time to the middle of February, the temperature was moderately cold, the nights only being frosty. At present it is regular and mild.

At the time of the second thaw, the catarrhal complaints increased considerably; and almost all the instances of Pneumonia occurred in January. These chiefly assumed the character of peripneumonia, and were attended with symptoms of debility, rather than of acute inflammatory excitement. In some cases, delirium was one of the first symptoms; and the patient complained more of headach, general uneasiness, and pains in the back and limbs, than of the cough. As the disease advanced, the cough became troublesome, the respiration difficult, an obtuse wandering pain was felt in the chest, and the voice was much impaired; the tongue was brown, and much furred; the pulse above 100, and feeble; but the strength was not severely depressed, as in Typhus. In one case, the patient died on the fourth day, with the symptoms just enumerated; and, on examination after death, both lobes of the lungs were found of a dark purple colour, especially at the upper and back part, and resembled the appearance of the liver, rather than of the healthy lungs; the bronchial cells being filled with effused blood. In general, the disease yielded to blisters, with diaphoretics. Bloodletting on the one hand, and a cordial treatment on the other, were contraindicated by the two opposite sets of symptoms; but, in these unfortunate combinations, experience rather warrants an approximation to the cordial treatment of Typhus, than to the debilitating remedies of Pneumonia.

Most of the other modifications of Catarrh shewed a tendency to debility; and there were few instances of high excitement. A comparatively small number of cases of Acute Rheumatism have occurred; but several of the mild febrile Catarrhs were attended with great general pains of the back and limbs, which, however, were removed in a few days by slight anodynes, together with diaphoretics and diluents.

It is remarkable, that scarcely an instance of any contagious disease is at present to be found in this district. No case of Typhus has occurred, and only one of Small-Pox, of Scarlet-Fever, and of Hooping-Cough; though this is the season in which all these diseases are usually prevalent.

Ophthalmia has been to a certain degree epidemic, though it has not come very frequently under the notice of Dispensaries. It has been remarked to make its attack suddenly, as if a mote

had fallen into the eye; the inflammation rapidly increasing, and the palpebræ becoming much swelled. In many cases it has almost as suddenly subsided, with little or no remedy; and, in several, it has at the same time attacked the other eye. It has, in many instances, subsided so rapidly, that no remedy was sought for. Whether this rapidity of its progress is the cause of its being little seen at public institutions, or whether the lower classes have been nearly exempt from it, I have not been able to ascertain.

Feb. 28. 1805.

Extract of a Letter from Mr Barlow, Surgeon, Blackburn, Lancashire.

Every practitioner knows the difficulty there is in keeping the hair of the scalp, in Tinea Capitis, sufficiently close cut or shaved, to give time adequate for the healing of the diseased parts. The intractableness of most children under these circumstances, when attempted to be controuled or governed by the accustomed mode of treatment, renders the disease, in most instances, very difficult to subdue. It is from a failure, under the various means which have been recommended by authors in this obstinate malady, that led me, if possible, to adopt a more easy and certain remedy; and I am happy to announce, that, by washing the affected head a few times, morning and evening, with the subjoined lotion, and suffering the parts to dry without interruption, the scabs will decorticate and peel off from the scalp, and leave the part underneath perfectly healed; and this, without either shaving the head or cutting off the hair. This application I have invariably found to answer (when duly applied) both in children and adults, and in many inveterate cases, even where every other means had been previously used without effect, some of which were of several years standing.

℞ Kali Sulphurat. (recens præparat.) ʒiij.
Sapo. Alb. Hispan. ʒj.
Aq. Calcis ʒviij.
Spir. Vinos. Rect. ʒij.
M. ft. Lotio pro Tinea Capitis.

Antivariolous Power and Progress of Vaccination.

It is undoubtedly to be regretted, that small-pox should have occurred, even in a single instance, in which vaccination seemed to have

have taken full and complete effect. But, since the cow-pock, or, at least, apparently perfect cow-pock is not an universal preventive of small-pox, we are decidedly of opinion, that that inconsiderate zeal which will not permit itself to be convinced, but continues to be deceived and to deceive others, is fraught with infinitely greater dangers than any which could have arisen from false or unnecessary alarms. The community is, therefore, under obligations of the strongest kind to those gentlemen who, in defiance of popular odium, illiberality and prejudice, have dared to disclose an unpleasant truth, and have endeavoured, by experimental investigation, to ascertain how far our confidence in the antivariolous powers of vaccination are to be limited; what are the circumstances which counteract these powers; and by what criterion we may be enabled to judge, if vaccination has afforded a permanent security against small-pox. Several curious facts have been already ascertained in the course of this investigation, which promise to elucidate, not only the anomalies which have been observed in cow-pock, but the modifications of which exanthematous diseases in general are susceptible.

1. Dr De Carro of Vienna ascertained, that cow-pock matter was capable of producing a local disease in persons who had previously been affected with small-pox; that matter taken from this source communicated a similar local disease, but that it never afforded any security against small-pox.

2. Dr Jenner pointed out another cause of the failure of vaccination, in the herpetic eruptions which are so common among the children of the poor. The pustule produced in this case, generally arrives at maturity, and finishes its progress within the period of the true cow-pock. It commences with a troublesome itching, and throws out a premature efflorescence, sometimes extensive, but seldom circumscribed, or of so vivid a hue as the other, resembling more a common festering of the skin. The colour of the pustule is yellow, and the contents opaque. This disease is also capable of propagating its like, but is not preventive of small-pox.

3. Dr Pearson, to whose indefatigable exertions we owe much of our knowledge of the phenomena of cow-pock, has read, at the Vaccine Institution, an interesting memoir on the late failures. After shewing that they are principally to be ascribed to the neglect of practitioners to become better acquainted with the vaccine infection, he took notice of the best authenticated cases which had come to his knowledge. He then endeavoured to prove, that the susceptibility of small-pox was totally destroyed by going through the cow-pock, and that the human constitution was equally unsusceptible of undergoing the cow-pock twice as the small-pox. As, however,

however, we are not yet acquainted with the characters by which we can certainly say, that the desired change in the constitution by the cow-pock has been effected, it is still necessary to employ a test or counter proof. For this purpose, Dr Pearson proposed the re-inoculating with vaccine matter rather than with variolous matter, which is on so many accounts objectionable.

To us, the propriety of Dr Pearson's proposal seems to be indubitable; and we gladly seize this opportunity of strongly recommending to vaccinators in general, to give a fair trial to the manner of employing this test of reinoculating with vaccine matter, discovered by Mr Bryce, and confirmed by extensive experience at the Public Dispensary of Edinburgh. He tells us, (p. 207.) that his observations lead him to conclude, that, in order to obtain the proposed criterion in the greatest perfection, a second inoculation should be made with matter taken from the pustule produced by the first, between thirty-six and forty-eight hours, before the areola of the first inoculation begins to appear, which will commonly be about the end of the fifth or beginning of the sixth day from the first inoculation. Now, if the progress of the second inoculation be so much accelerated about the time when the general affection of the system usually takes place, as to have an areola formed within a few hours, or very soon after the first, and increasing and fading nearly at the same time with it, it may, according to Mr Bryce, be considered as a certain mark of a constitutional affection; but, if the second inoculation proceeds through all the stages, and has all the duration of a primary affection, it is to be concluded, that no constitutional affection has taken place from the first; the second inoculation must, in this case, be regarded as a primary affection, and a third puncture made according to the plan laid down for the second; and thus we should go on until the proper test be obtained, or until we be satisfied that the constitution completely resists the action of cow-pock.

4. Vaccination has now been practised a sufficient length of time to entitle us to look for a proof of its beneficial effects, in reducing the number of deaths from small-pox. The Physicians of the Vaccine-pock Institution, in their Report to the Governors for 1803, alluding to this expectation, are of opinion, that it has not yet been fulfilled, owing to vaccination being still but partially adopted, and chiefly by those who would have inoculated for the small-pox, which leaves the same proportion for natural small-pox as before. According to them, the bill of mortality of London reports 1202 to have died in 1803, whereas 1111 died in 1799, 1040 in 1795, and only 522 in 1797; and, although the deaths have been greater in the intermediate years, still 1202 is not much less than the annual average during any five years for the last half century,

century. On the contrary, the Royal Jennerian Society, in their report for 1804, point out the remarkable decrease of deaths from small-pox during that year, in the following comparative view, extracted from the bills of mortality.

January 1803	—	181	1804	120
February	—	121	—	77
March	—	95	—	44
April	—	61	—	38
May	—	69	—	88
June	—	48	—	29
July	—	50	—	35
August	—	67	—	27
September	—	85	—	33
October	—	64	—	50
November	—	152	—	45
December	—	180	—	50

Total 1173 Total 586

This decrease will appear still more important, when compared with the annexed statement of deaths by small-pox, for fifty years, within the bills of mortality, averaged by ten years.

From 1750 to 1759	—	19,642
1760 1769	—	24,435
1770 1779	—	22,039
1780 1789	—	17,121
1790 1799	—	17,685

Total 100,922.

Making an annual average of 2018 deaths per small-pox in fifty years.

The following is an annual statement of deaths in the present century :

1800	—	2469
1801	—	1461
1802	—	1579
1803	—	1173
1804	—	586

The knowledge of these facts, it is hoped, will be strongly promotive of the beneficial practice of vaccine inoculation, it appearing that the fatal disease of small-pox has progressively declined, as the inestimable discovery of Dr Jenner has been introduced.

The benefits of vaccination have at last been extended to almost all the British colonies and settlements. A most interesting report of the progress of vaccination in Bengal has been published there, and reprinted in London, by Mr John Shoolbred, superintendent

intendant general of vaccine inoculation. The number inoculated in that government, up to the end of 1803, was 4,456; in the Presidency of Madras, no less than 145,840 were vaccinated previously to the 30th April 1804; and, in Ceylon, 21,000, previously to the 13th of the same month. It has also been introduced into the isles of France and Bourbon, and into Sumatra. It is perhaps not uninteresting to remark, that the vaccine matter with which all India has been supplied, was not originally derived from Great Britain; but was taken directly from cows in Lombardy, by Dr Sacco, and sent from Vienna, by Dr De Carro, to Bagdad, from which it went by different stages to Bussora and Bombay.

Colonel Crichton's Car for conveying Sick and Wounded Troops.
Plate III. fig. 2.

LIEUTENANT-COLONEL CRICHTON has successfully directed his mechanical genius, already well known, by his invention for the speedy conveyance of troops, to another similar, and, in our opinion, much more useful purpose, the safe and easy conveyance of wounded and sick troops. It is formed of a lower frame *aaa*, made of ash or elm, 7 feet long, and 5 feet 4 inches broad, and an upper elastic frame *cccc*, made of the best ash, remarkably clean and well seasoned, thick in the middle, and tapering towards the ends. The upper frame is supported in the centre of each of its long sides by a strong pillar of wood *dd*, bound by two circular pieces of iron; and on each of its ends are fixed two strong iron hooks *gggg*; from which a cot *ee*, as represented in the plate, or two hammocks, may be suspended. It is also surmounted with four semicircular hoops, over which a cover may be thrown, to protect the patient from the weather.

When this machine is to be used, one or two sick or wounded men being previously laid in the cot, or in two hammocks, the frame is to be placed over them, and the ropes at the head, and then those at the feet are to be hooked up. The frame may now be carried by the four handles *bbbb*, by four men, to a cart or baggage waggon of the same size, or larger than itself, to which it is to be firmly bound by ropes, and the whole machine is ready to move. When the sick are to be taken from the baggage cart, the whole frame is to be lifted at once, and carried to the hospital; the bed is then placed on a bedstead, or where it is to remain, unhooked first at the feet, and then at the head, and the frame taken away. Upon large English waggons two or three of these frames may be conveniently placed.

The utility of this contrivance is apparent: being suspended by ropes, its horizontal motions are performed by swinging, and the elasticity of the upper frame, from which the bed is suspended, renders

tenders its vertical motions scarcely less easy. We have seen contrivances in French surgical authors for conveying wounded men; but they all had the radical defect of being adapted only to the wounded limb, while the body was not protected against the jolting of the carriage; and it was necessary to move the patient from and to bed. In consequence of the frequent accidents which happen in large and manufacturing towns, a frame of this sort, with one or two cots fitted to it, would be an useful appendage to every hospital. It is already introduced into the Infirmarys of Edinburgh and Dundee.

Singular Variety of Hernia.

AT a meeting of the Royal Society of Edinburgh, on the 7th March 1803, ' Mr Russel read an account of a singular variety of Hernia which occurred to him while he was delivering Clinical lectures in conjunction with Dr Brown and Mr Thomson. Mr Thomson dissected the parts with great care and accuracy, and discovered certain peculiarities, which makes the knowledge of this variety a real addition to the pathology of the disease. It is a modification of Inguinal Hernia. But as the circumstances of difference are constant and essential, it may fairly be regarded as a distinct species. In the common cases of inguinal hernia, the viscera which are to form the protrusion enter the upper and internal orifice of the abdominal ring, along with the spermatic cord, accompany the cord through the whole length of the passage, and come out along with it at the inferior and external orifice of the ring. Thus the hernia is formed by the dilatation of a natural passage. But in this new and hitherto undescribed variety, the viscera burst through the common parietes of the abdomen, exactly opposite to the lower and external orifice of the ring, where they come into contact with the spermatic cord, and descend along with it directly into the scrotum. This hernia, therefore, resembles a ventral hernia in its commencement, by beginning to protrude where there is no natural opening; and it resembles an inguinal hernia, by passing through the lower and external orifice of the abdominal ring, where the protrusion of the common inguinal hernia is completed. Thus, it is a hernia of a mixed nature, forming an intermediate species, between a simple and pure ventral hernia, and the common and perfect inguinal hernia.

Another essential circumstance respects the position of the hernia; with regard to the course of the epigastric artery. In ordinary cases of inguinal hernia, the epigastric artery runs on the inside of the hernia; but in this variety it constantly runs on the outside. This leads to some important considerations in practice, though Mr Russel did not enter fully into the applications of the peculiarities,

peculiarities, either to practical points, or to the explanation of various curious circumstances in the history of hernial swellings."

—*Transactions of the Royal Society*, vol. V. *History*, page 23. 4to. Edinburgh. 1805.

Intended Medical Publications.

There are now no less than three periodical works published, for the purpose of diffusing medical knowledge in America. The Medical Repository, edited at New York by Drs MITCHELL and MILLER: The Philadelphia Medical Museum, by Dr J. R. COXE: And the Philadelphia Medical and Physical Journal, by Professor B. SMITH BARTON, M. D. Of each of the two last, which were only begun in 1804, we have received the first number; but of the former, there are six volumes in this country. They contain much interesting information, particularly regarding the Yellow Fever, of which we shall give an extract in a future Number.

The Croonian Lecture on Muscular Motion was lately read to the Royal Society by ANTHONY CARLISLE Esq. F R. S. In this inquiry, the author has adduced many original experiments on several important points; on the cohesive attraction of muscular parts; on the connexion between muscular motion and the vascular, respiratory, and nervous systems. Various facts and experiments were related on the effects of temperature, illustrated by remarks on cold-blooded animals, and experimental inquiries respecting those animals which become torpid during the winter season. The whole of this lecture is extremely important and interesting; it displays profound research and philosophical induction. As soon as the Philosophical Transactions are published, that part of them at least in which this paper is inserted, we shall direct more particular attention to this valuable communication.

The public will be gratified to hear, that another part of Dr WILLAN's valuable work on Cutaneous Diseases is just published. It constitutes the first part of the third order, and will include the description of *Measles* and *Scarlet Fever*; two of the most important diseases of the skin.

Dr HAYGARTH is engaged in collecting a Clinical History of Diseases, deduced from his own personal observation and experience. Part I. will include the Clinical History of Acute Rheumatism; and Part II. a Clinical History of the Nodosity of the Joints. As the learned author has been for some time arranging his materials, this work may soon be expected to appear.

Dr SROCK (of Bristol) will shortly publish a work, entitled, 'Medical Collections of the Effects of Cold as a Remedy in certain Diseases.'

Dr

Dr CLUTTERBUCK has announced his intention of publishing an Inquiry into the Seat and Nature of Fever, as deducible from the Phenomena of the Disease, and the Principles of the Animal Economy. This was the subject of his inaugural dissertation.

Mr BLAIR, surgeon of the Lock Hospital in London, is on the eve of publishing an English Translation from the fourth edition of Dr Girtanner's Treatise on the Lues Venerea, which will be illustrated by copious notes, critical, historical, and practical.

Mr BLAIR has likewise announced his intention of publishing an extensive system of Medical and Operative Surgery, comprising the latest improvements in theory and practice; to be accompanied by numerous engravings, which are in a considerable state of forwardness. This work will be comprehended in about six octavo volumes, of which the *first* is expected to be printed very soon. We are authorised to contradict a report lately circulated, of Mr Blair having abandoned the design of completing this system, and to assure our readers that there will be no unnecessary delay in rendering the successive volumes fit for the press.

Sir JOHN SINCLAIR Bart. has in the press an extensive work on Longevity, which will contain much curious and important information on this interesting subject.

Mr BENJAMIN BELL of Edinburgh has announced his intention of publishing a Treatise on Strictures of the Urethra, principally with the view of exposing the bad consequences arising from the use of Bougies armed with Caustic.

Mr JOHN BELL has the second volume of his magnificent work, 'The Operations of Surgery,' in a state of very considerable forwardness. It will contain, 1st, The Anatomy of the Parts within the Pelvis, the operations of Lithotomy, and the Cure of Stricture, Fistula, &c.; the Anatomy of the Cranium, Practical Observations deduced from that part of Anatomy, with Dissertations on the Effects of Fracture, Necrosis, Caries, and other Diseases of the Skull; on Tumours from without affecting the Brain, and Tumours of the Dura Mater, making their way through the Cranium; the Characters and Distinctions of all the Tumours of the Head, with Rules of Practice.—2d, The Anatomy and Pathology of the Brain; its Structure and Diseases Described; its various Influences over the Mind and over the Body; on the Intellect; on Organic Actions; and on Sensation, ascertained: with Dissertations on Apoplexy, Palsy, Hydrocephalus, and Madness; displaying the Analogies of Internal Diseases with External Injuries; and concluding with Rules of Practice; Rules for giving immediate assistance in Apoplectic and Paralytic Strokes, and in Maniacal Paroxysms; and Rules for Prevention, by regulating the general condition of the system.

We continue to receive, though irregularly, several of the foreign journals, from which we shall from time to time extract, for the information of our readers, whatever may appear new, or particularly interesting.

The articles we had prepared for this Number are postponed for want of room.

M. ALIBERT, physician to the hospital of Saint Louis at Paris, has announced proposals for publishing a large and splendid work on the Diseases of the Skin, comprehending a description of these disorders as they are met with at the hospital of Saint Louis, and an account of the best mode of treating them. This work is to be published in folio numbers, with coloured plates. One number to be delivered every four months, price two guineas. The first number to be ready on the 1st of March.

The following publications have lately been imported from the Continent:

Coup d'Oeil sur les Révolutions, et sur la Réforme de la Médecine. Par P. J. G. CABANIS, Membre du Senat Conservateur, de l'Institut National, de l'Ecole de Médecine de Paris, &c. &c. 8vo. pp. 438. A Paris. An XII. 1804.

Ricordi dell' Anatomia, Chirurgia, &c. Records, Anatomical and Chirurgical, respecting the Head and Neck. Collected by VINCENZO MALACARNE. 2 vol. 8vo. Padua.

Œuvres de Pierre Camper, &c. i. e. The Works of Peter Camper, relating to Natural History, Physiology, and Comparative Anatomy. 3 vol. 8vo, with folio Atlas of Plates. Paris 1803. Imported by De Boffe.

TO CORRESPONDENTS.

We would gladly comply with the desire of a *Country Practitioner*, that we should mention the price of the Books we notice; but it would subject us to advertisement duty.—Communications should be addressed to the EDITORS of the EDINBURGH MEDICAL and SURGICAL JOURNAL, to the care of Messrs CONSTABLE & Co. Edinburgh; LONGMAN HURST REES & ORME, London; or GILBERT & HODGES, Dublin. The engraving of the dissection of M. A. Cooper's case will be given with the next Number, as it was accidentally destroyed after it was almost finished.

No. III. was published on Monday, 1st July, and No. IV.
1st October 1805.

THE
EDINBURGH
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JULY 1. 1805.

PART I.
ORIGINAL COMMUNICATIONS.

I.

Essay on the Analysis of Animal Fluids, principally with the View of ascertaining their definite Characters. By JOHN BOSTOCK, M. D. Liverpool.

THE precision, which the analysis of mineral and vegetable substances has obtained, does not appear to be yet extended to the products of the animal kingdom. This remark may be applied both to the solids and fluids which compose the animal body; but it is the most applicable to the latter class of substances. The terms serous, mucilaginous, gelatinous, &c. are employed, even by the most esteemed medical and physiological writers*, in a vague and indeterminate manner, without attending either to the original import of the words, or to the restricted meaning which it is necessary to impose upon popular expressions, when they are adopted in scientific researches. The object of the present paper is to ascertain a definite character for what I propose to call the primary animal fluids, and to discover accurate and delicate tests, by which their presence may be easily and certainly indicated. By primary fluids†, I mean those into which the compound fluids existing in the animal body are capable

VOL. I. NO. 3. R

* Even Mr Abernethy, in his late valuable work on tumours, speaks of the gelatinous part of the blood, where I conceive, from the context, there can be no doubt that he intended to designate the fibrine.

† All the animal fluids, both primary and compound, are merely solutions of a solid body in water; but those substances which are the most frequently seen in a state of solution, have very generally obtained the title of fluids.

pable of being resolved by the application of different reagents, without decomposing them into their ultimate elements.

ALBUMEN.

The first of the animal fluids, which I propose to make the subject of my investigation, is the albumen. With the exception of water, no fluid appears to enter so largely into the composition of the animal body. It forms a very considerable proportion of the blood, and is found in greater or less quantity in nearly all the secretions. It is also capable of assuming the solid form, and in this state it constitutes the basis of all the membranous substances, which are so extensively dispersed through every part of the system, it composes the cellular tissue into which the earth of the bones and the fibrous matter of the muscles are deposited, while it enters largely into the structure of the skin, the glands, and the vessels. At present, however, we shall direct our attention to it while in the liquid form.

In order to obtain it in a state of purity, I had recourse to the white of the egg, a substance to which the name of albumen was originally applied, and which is still considered by the most eminent chemists as composed entirely of this substance *. In order to ascertain how far this opinion was correct, I kept a quantity of the white of the egg in a temperature of 212° , until it was firmly coagulated. It was then cut into small pieces, and placed in the upper part of a narrow-necked funnel, when a few drops of a brownish, viscid fluid were separated from it. Other pieces of the same coagulum were kept for some time in boiling water, the fluid being then passed through a filter had acquired a light brownish colour and a faint colour; when agitated, it was slightly mucilaginous. By slow evaporation, a small quantity of a brittle, semi-transparent substance was obtained. It appeared therefore evident, that the white of the egg contains a small quantity of a substance incapable of coagulation, and therefore essentially different from albumen; I still, however, continued to employ it for the purpose of ascertaining the properties of albumen, as it affords this substance in a state of greater purity than it can be procured from any other source.

It was an object of some importance to ascertain the proportion which this foreign ingredient bore to the albumen itself. 100 grains of firmly coagulated albumen were kept for some time in boiling water, and this being poured off, a fresh quantity was added, and this process repeated, until the water appeared to retain

* Hatchett, Phil. Trans. 1800. p. 375.

Thomson's Chemistry, vol. iv. p. 484.

tain no farther impregnation. The whole of the fluid was then evaporated, and a residuum was left which amounted to $4\frac{1}{2}$ grains. Besides the admixture of this peculiar substance, the white of the egg contains a considerable quantity of water, not only in its liquid state, but after it is coagulated. By a gentle heat, the water may be evaporated, and the solid matter is left behind in the form of a hard, brittle, transparent substance. I here found that, upon an average, 4-5ths of recently coagulated albumen may be considered as consisting of water. Hence it will appear, that 100 grains of the white of the egg consist of 80 grains water, 4.5 grains of uncoagulable matter, and 15.5 grains only of pure albumen.

The most distinguishing characteristic of albumen is the property of being coagulated by heat; a circumstance which forms an obvious and easy test of its presence, when it exists in a compound animal fluid in any considerable proportion. In order to ascertain how small a quantity of albumen could, by this means, be rendered visible, I added 13 grains of the white of the egg to 87 grains of water, and thus formed a solution, one grain of which contained $\frac{1}{80}$ grain of pure albumen. Five grains of this solution were then added to 95 grains of water; so that 100 grains of the fluid contained only $\frac{1}{80}$ grain, or $\frac{1}{8000}$ of its weight of pure albumen. This was exposed to the heat of boiling water, and a perceptible opacity was produced in the fluid.

The effects of the oxymuriate of mercury were next tried. One drop of a saturated solution of this salt, added to 100 grains of water, containing $\frac{1}{8000}$ of its weight of albumen, produced a very evident milkiness; after some hours, a curdy precipitate separated and fell to the bottom. A solution of half this strength, containing only $\frac{1}{16000}$ of its weight of albumen, was then tried by the same reagent, and, even in this instance, a sufficiently obvious effect was produced.

The nitro-muriate of tin is a powerful coagulator of albumen in its unmixed state; but I found it not to be so delicate a test as the oxymuriate of mercury. A hundred grains of water, containing $\frac{1}{8}$ grain of albumen *i. e.* $\frac{1}{640}$ of its weight, was not affected by this reagent until after some hours, when the fluid exhibited a degree of milkiness.

In order to ascertain the effects of tan upon albumen, I macerated half an ounce of powdered galls in half a pint of water for some hours, and filtered the fluid. A deep brown, transparent liquor was produced, 100 grains of which I found, by evaporation, to contain $2\frac{1}{2}$ grains of solid residuum. Equal parts of this preparation of galls, and of a solution of albumen, in the proportion of one part to 1000 parts of water, were mixed together; at first,

no effect could be perceived; but, after some hours, an evident precipitate was formed, which subsided slowly.

The aqua lithargyri acetati, or extract of goulard, is an active precipitant of several animal fluids; when dropped into a strong solution of albumen ovi, a very copious and dense precipitate is immediately formed. It is, however, somewhat difficult to determine how far this effect depends upon the albumen itself, as goulard has been considered to be the appropriate test of the uncoagulable part of the blood, which, it may be supposed, resembles the uncoagulable part of the white of the egg. The aqua lithargyri acetati is likewise decomposed by several of the saline bodies, which are found to exist in almost all the animal fluids. I have sometimes known it to yield a precipitate, even when added to distilled water; and, in all cases, after exposure to the atmosphere for a few hours, the water to which it has been added becomes turbid, and is covered with a thin film. In order to try the effect of this reagent on albumen, I added one drop of it to 200 grains of water, and, upon observing that the transparency of the fluid was not affected, a single drop of the solution of albumen, of the same strength as that mentioned above, was added. It formed a dense precipitate as it fell through the fluid, and, upon agitation, the whole was rendered slightly opaque. In this case, the proportion of the water to the albumen was as 10,000 to one; to the uncoagulable part of the white of the egg it would be about as 30,000 to one.

The next reagent which I employed was the nitrate of silver. A single grain of a saturated solution of this salt produced an immediate turbidness in 100 grains of water, containing $\frac{1}{10}$ grain of albumen; and, after some hours, a small quantity of a curdy precipitate fell to the bottom of the vessel. It might, however, be suspected that, in this case, the effect produced depended upon a quantity of the muriate of soda contained in the albumen. I found that 100 grains of water, containing only $\frac{1}{100000}$ grain of common salt was rendered evidently turbid by one drop of the nitrate of silver*; but the muriate of silver, which is produced in this case, is in the form of a grey powder, and subsides more rapidly

* I weighed, very exactly, a grain of salt, and dissolved it in 200 grains of water; one grain of this solution was afterwards added to 99 grains of water, and, by repeating the operation for three successive times, I obtained 100 grains of water, containing only $\frac{1}{100000}$ of its weight of salt. I then took 99 grains of distilled water, and poured into it one drop of the nitrate of silver; after waiting for some time, until I was satisfied that no effect would take place, I added a single drop of the last solution of salt; thus making it $\frac{1}{100000}$ part of the mixture; a faint, but perceptible, opacity was almost immediately produced.

pidly than the precipitate did in the former instance, where it produced a white, flaky substance.

I found that a solution of albumen, of the same strength with that employed in the last experiment, was immediately decomposed by the nitro-muriate of gold. One drop of this metallic solution instantly produced a dense, white precipitate, in 100 drops of water, containing only $\frac{1}{10}$ of a grain of albumen.

Albumen, in a concentrated state, is powerfully coagulated by alum: I found, however, that this reagent is not so accurate a test of its presence, when in a diluted state, as some of those which I had already employed. One-fifth of a grain of albumen, dissolved in 100 grains of water, was indeed rendered slightly turbid by the addition of a few drops of a saturated solution of alum; but no precipitate was formed. Before I conclude my account of these experiments, I must observe, that the strength of the solution of albumen was, in all cases, rather less than my estimate. When I added the albumen to the water, a small portion of it always remained insoluble, and this was separated from the fluid by filtration, before the experiments were performed. This insoluble part I supposed to consist of the membranous matter, with which it is said that the white of the egg is intersected. The quantity was indeed almost too small to be appreciated; but where it is desirable to attain as much accuracy as possible, I think it necessary to mention every circumstance which may in the smallest degree affect the result.

The experiments related above will, I conceive, indicate, with a sufficient degree of accuracy, the presence of albumen as a constituent in an animal fluid. The property of being coagulated by heat is a characteristic of this substance, which will always serve as a mark of discrimination; and we have found that this property is not destroyed by dilution with 1000 times its weight of water. This, therefore, may be considered as a test of its presence, minute enough for all practical purposes. We have also found that there are several reagents which possess the power of precipitating it from its solution in water, while existing only in the same proportion. It will, however, be necessary to observe their operation upon the other animal substances, before we can determine their use in the analysis of compound fluids.

JELLY.

The next substance which I propose to examine is jelly. The peculiar characteristic of this body is its property of becoming concrete by cold, and being liquified by the application of a gentle heat. It enters into the composition of the blood, though less largely than the albumen: it is also an ingredient in the skin,

membranous texture, ligaments, cartilages, and tendons. By boiling, it is easily extracted from these substances, and, by evaporation and cooling, the whole is reduced to a mass of greater or less solidity, in proportion to the previous degree of concentration. Isinglass, which is prepared from the inner membrane of the swimming bladder of the sturgeon, has been considered as consisting of jelly, nearly in a state of purity. I employed it for the following experiments.

Four grains of isinglass were dissolved in 200 grains of water, and thus a standard fluid was formed, one grain of which contained $\frac{1}{50}$ of a grain of jelly. This solution became perfectly concrete by cooling. In the first place, I wished to ascertain how small a proportion of jelly dissolved in water was capable of assuming the concrete state. Equal weights of the standard fluid and of water, *i. e.* one part of jelly to 100 parts of water, produced a compound which was completely stiffened by cooling; but I found that two parts of water, and one of the standard, *i. e.* one part of jelly to 150 parts of water, produced a compound, which, though evidently gelatinous, did not assume the concrete form.

One of the most active precipitants of jelly is the tanning principle. I found that a mixture of five grains of the standard solution, and 95 grains of water, produced a copious precipitate, when added to an equal quantity of an infusion of galls, of the same strength with that employed in the experiments upon albumen. In this instance, the jelly was to the water as 1 to 1000. I afterwards reduced the quantity of jelly until it composed $\frac{1}{1000}$ part only of the solution, and, in this case, a considerable precipitate was still produced by the infusion of galls.

A quantity of the standard solution had a few drops of the aqua lithargyri acetati added to it; but no more effect appeared to be produced than would have ensued from mixing it with an equal quantity of pure water.

No effect was produced by adding the oxymuriate of mercury to the standard solution. The nitrate of silver, and the nitro-muriate of tin, were each employed, and produced a very slight and almost imperceptible opacity.

The addition of the nitro-muriate of gold caused a small quantity of a dense precipitate, when added to the standard solution; but when this was so far diluted as to contain one grain of jelly in 500 grains of water, the effect was no longer perceptible.

MUCUS.

Animal mucus, or mucilage, enters largely into the constitution of many parts of the body, and forms a considerable proportion of several of the secretions. The term mucus had been generally

nerally employed in a vague and unrestricted sense, until Mr Hatchett, in his valuable paper on the membranous parts of animals, inserted in the Phil. Transf. for 1800, attempted to assign it a more appropriate and definite meaning. He conceives, that jelly and mucus are only modifications of the same substance, and do not essentially differ from each other; he considers it to be entitled to the appellation of mucus, when it is soluble in cold water, and cannot be brought to the gelatinous state. Dr Thomson adopts, in general, the idea of Mr Hatchett, and lays down the following as the characteristic properties of animal mucilage. It is soluble in cold water; insoluble in alcohol; neither coagulable by heat; not generating into a jelly; precipitable by tan, and the nitro-muriate of tin. I have been induced, from the results of my observations, to form a different opinion respecting the relation of jelly and mucus; but I shall defer the statement of it until I have related the experiments which have led me to dissent from such high authority.

By agitating recent saliva for a short time in cold water, part of it was dissolved, and, after being passed through a filter, was made the subject of experiment, being, as I conceived, a solution of nearly pure mucus. By a careful evaporation, I found that the water had dissolved $\frac{1}{140}$ part of its weight.

No effect was produced by the addition of the oxymuriate of mercury, and the nitro-muriate of tin caused only a slight opacity. No effect was produced by the addition of equal parts of this solution and the infusion of galls. The aqua lithargyri acetati added to the solution produced an immediate opacity, and, after some time, a white, flaky precipitate fell to the bottom of the glass. No appearance of coagulation was produced by exposing the solution for some time to the heat of boiling water; nor was there any tendency to gelatinize by evaporating, and afterwards cooling the fluid.

I afterwards endeavoured to obtain mucus, in a state of purity, from another source. For this purpose, an oyster was agitated for a few minutes in a quantity of cold water; the fluid was filtered, and appeared slightly opaque and glutinous. By evaporation, it appeared that it had dissolved about $\frac{1}{10}$ of its weight of animal matter. A quantity of this solution, diluted with an equal bulk of water, was employed in the following experiments.

The oxymuriate of mercury being added to it produced no effect. The infusion of galls, after some time, produced a slight degree of turbidness, and, at length, a precipitate was formed in small quantity. The aqua lithargyri acetati caused an immediate opacity, and, after some time, a dense precipitate.

These experiments nearly coincide with the former. In both cases,

cases, no effect was produced by the oxymuriate of mercury, thus proving the absence of albumen. The small precipitate produced by the galls indicated the existence of only a very minute quantity of jelly. The effect was scarcely as great in this instance, where the animal matter composed $\frac{1}{1000}$ part of the weight of the solution, as was produced by the same reagent upon a solution of jelly, when it composed only $\frac{1}{10000}$ part of the weight of the fluid. Very nearly the whole of the animal matter, therefore, probably consisted of mucus, the presence of which was indicated by the goulard.

I apprehend that these experiments will be deemed sufficient to establish a decided and essential difference between mucus and jelly. Independent of the gelatinizing property of the latter, the effects produced upon them by the tanning principle, and by the aqua lithargyri acetati, are exactly opposite. Tan is a most delicate test of jelly, but does not in any degree affect mucus. Aqua lithargyri acetati is a delicate test of mucus, but does not in any degree affect jelly. The oxymuriate of mercury, on the contrary, which is one of the most accurate tests of albumen, does not appear to be affected either by jelly or by mucus.

Albumen, jelly, and mucus, I am inclined to consider as the only primary fluids which are dispersed through the different parts of the body. Particular vessels or glands contain and secrete particular fluids, which cannot be resolved into other fluids without decomposition, as the fibrine of the blood, the resin of the bile, the urea of the kidney, &c.; but these are, in all instances, confined to their appropriate organs, and do not necessarily enter into the present investigation.

From the above experiments, I think we may be enabled to lay down, with a considerable degree of accuracy, the leading characteristics of the three primary animal fluids, and to establish tests, by which their presence may be minutely ascertained. The most remarkable property of albumen is its becoming coagulated by heat; a property which it retains so far as to communicate a degree of opacity to its solution in water, when it forms only $\frac{1}{1000}$ part of its weight. A solution of the same strength has its albumen precipitated by the oxymuriate of mercury, and this test will indicate its presence, when composing no more than $\frac{1}{10000}$ of the mixture. The tanning principle, the aqua lithargyri acetati, the nitrate of silver, and the nitro-muriate of gold, are all tests of the presence of albumen, nearly as minute as the oxymuriate of mercury; but they are less valuable, because their effects are not confined to albumen. The nitro-muriate of tin and alum are also precipitants of albumen, but they are less delicate in their operation than the reagents enumerated above.

The

The peculiar characteristic of jelly is its property of becoming concrete by cold, and being again rendered fluid by a gentle heat, we have found that its solution in water retains this property when it composes $\frac{1}{1000}$ part only of the weight of the fluid. Tan is a still more minute test of jelly than of albumen; but jelly is not in the least degree affected by the oxymuriate of mercury, and may thus, in all cases, be easily distinguished from it. No effect is produced in jelly by goulard, and scarcely any by the nitrate of silver, and the nitro-muriate of tin, when it is in a state of much dilution. By means of tan, jelly may be easily detected in a fluid of which it forms only $\frac{1}{1000}$ part.

The properties of mucus are principally negative; it is not coagulable by heat, nor capable of becoming gelatinized; it is not precipitable either by the oxymuriate of mercury or by tan, but it may be detected with considerable minuteness by the aqua lithargyri acetati.

It appears, therefore, that the oxymuriate of mercury, tan, and the aqua lithargyri acetati, are the three most valuable tests. The nitro-muriate of tin is a less delicate test of albumen than the oxymuriate of mercury, and is also in some degree affected by jelly. The nitrate of silver appears to be a very nice test of albumen; but it is objectionable, in consequence of its being decomposed by the muriate of soda, a salt which is supposed to exist in most of the animal fluids. The nitro-muriate of gold is a delicate test of albumen, but it likewise precipitates jelly.

In the analysis of a fluid which is supposed to contain either albumen, jelly, or mucus, the first step is to observe the effect of the oxymuriate of mercury; if this produce no precipitate, we may be certain that the fluid in question contains no albumen. We must next employ the infusion of galls, and if this also cause no precipitate, we may conclude that the animal matter held in solution consists of mucus alone.

I have before remarked, that the ideas which I have formed of the nature of jelly and mucus, and the relation which these substances bear to each other, differ considerably from those of Mr Hatchett. It is not, indeed, without a degree of diffidence that I dissent from so distinguished a chemist; but I conceive that I am justified by the experiments related in this essay. Mr Hatchett, in the valuable paper to which I have already referred, speaks of the white of the egg as consisting of pure albumen*; but I believe that, in this particular, he will be found not perfectly accurate.

There is a great resemblance between the physical properties

* Phil. Transf. 1800. p. 375.

ties of animal mucus and vegetable gum; and I found that they strongly resemble each other also in their chemical qualities. A solution of gum arabic, containing one grain of gum to 200 grains of water, was not affected either by the oxymuriate of mercury, or by tan. With the nitro-muriate of tin, and with the nitrate of silver, there was only a slight degree of opacity; but with the aqua lithargyri acetati there was a dense precipitate instantly formed.

II.

A Memoir on the State of Health of the 88th Regiment, and of the Corps attached to it, from 1st June 1800 to the 31st May 1801, as originally presented to the Medical Board, Bombay, by JAMES M'GREGOR, A. M. M. D. Surgeon H. M. 88th Regiment, and Member of the Royal College of Surgeons, &c. &c.

To William Sandwith, Esq. Secretary to the Medical Board of Bombay.

I now present the Board with the compendium of another year's practice: it is drawn out to a greater length than that of last year. I have paid more attention to it, I have endeavoured to be more accurate, and, I think, I have learned a little more on a subject of which, on coming to this country, I was entirely ignorant.

In presenting it to the Board, I am aware that I am doing it to those who are the most competent to judge on the subject: every circumstance which I shall advert to they are intimately acquainted with, as well from the monthly reports, and the details of cases and dissections, as from inspection of the regimental hospital, while the 88th regiment was stationed at the presidency. The account of last year was brought down to the 9th June 1800: However, in order to have a complete period, I have commenced the present from 1st June 1800, and brought it down to the 31st of May 1801.

In addition to the account of the diseases of the 88th regiment, I have given that of detachments of other corps, which had been placed under my charge. On two particulars a good deal of time has been paid, as well as attention; viz. the state of the weather, and the dissections of the dead. A meteorological journal was regularly kept: The state of two thermometers, both in the sun and

and in the shade, at least four or five times in the day, was compared by Mr Bruce and myself. The instruments were, I believe, both correct. We paid all the attention we could to the dissections, which were generally performed by Mr Bruce, Mr Tonry, and myself. Never less than two attended; and, to avoid mistakes, notes of the appearances were taken down on the spot by each.

June 1800. In this month we received a very considerable addition to the sick of the former month*. The monsoon continued to threaten, and a little rain fell before the 12th of June, when a great quantity fell. The number of inches which fell daily after this was considerable; but I had no opportunity of measuring it accurately. After the 12th, there was not a fair day in the month. The thermometer in the shade, in the beginning of the month, ranged from 86° to 92°; from the 12th to the end of the month, from 75° to 82°. From the beginning of the month, the number of sick continued gradually increasing. On the 24th, there were 204 in the hospital, from the 88th regiment and the detachments. In the beginning of the month, there arrived from England 53 recruits for the 75th regiment, 30 for the 77th, and 47 for the 84th regiment. There likewise arrived a detachment from the Red sea of 217 men of the 84th regiment, under Colonel Murray. Of the above detachments I had the medical charge.

All the men, as well from the Red sea as those from England, arrived in a very healthy state. This, however, had not long been the case with Colonel Murray's detachment from the Red sea. Since they had left Bombay, fifteen months before, they had lost 41 men. During this period, they were stationed five months at Aden, five months on the island of Perim, at the Straits of Babelmandel, and five months at Suez. In the latter place they were very healthy: they had but a few men ill of the scurvy at Aden, and most of their loss was at Perim, where hepatitis and fever were the only diseases. There the thermometer in the sun stood at 130°. Of the great number of sick in the hospital at the close of this month, though the 88th regiment daily sent some, a large proportion came from the detachment of the 84th. This perhaps was partly owing to the change of season, and partly to some unavoidable irregularity among the men after arriving from service, and receiving great balances of pay due to them. In the 88th regiment, with a great deal of sickness, only four deaths fell on this month. Of the 25 dysenteric cases admitted, many proved tedious; and of the five cases of hepatitis, the greater

* See the *Annals of Medicine* for 1801.

greater part were treated with nitric acid, and were soon cured. We received several cases of measles; several of catarrh, and many troublesome ophthalmias: and I never saw inflammation run higher than in this last disease. A very large proportion of the detachments was admitted into the hospital; and, towards the end of the month, many of the cases put on a very serious appearance; but no one died during the month. In the detachment from the Red sea, many old cases of chronic hepatitis made their appearance, and the greater number of the recruits were attacked with dysentery.

July. From the 12th of last month to the end of July, there was only one fair day, the 8th of July. The quantity of rain which fell was very great, and the thermometer moved from 79° to 83° in the shade. Of the 88th regiment, there were 154 sick in the hospital during the month. Of these, 82 were admitted in the course of the month. The distribution of them may be seen in the annexed table. Five died in the course of the month. The rheumatic cases proved nearly as obstinate and tedious as we have ever found them in England. The occurrence of scurvy in two men, whose diet was always fresh animal food, with a proportion of vegetables, was a matter of surprise. Some months before, both of them had gone through courses of mercury. The diseases of the eye yielded more, perhaps, to the change of season than to the remedies, but in each of two cases an eye was lost. The detachment of the 84th sent 96 to the hospital during the month. Of these, 36 were venereals, 32 dysentery, and 12 hepatitis, relapses of diseases contracted in the expedition to the Red sea: the rest were catarrhal, rheumatic, and other less serious cases. Many of the dysenteric cases being slight were treated with Pulv. Ipecac. Comp. and some of the remedies used in the same month last year in the 88th regiment: but, in almost every case, we were obliged to desert this plan, and to have recourse to mercury, or the nitric acid. The 84th regiment had been nearly five years in a warm climate. Did a five years' residence in a tropical climate establish this difference between the men of the 84th and 88th regiments? In the same month last year, the European practice succeeded in the latter regiment; but, as we afterwards found, it had not now the same success as on their first arrival in the country. One of the 84th detachment died. Of the 75th we admitted, during the month, 34 into the hospital, or more than one half. They were as follows: 15 of dysentery, 10 of catarrh and pneumonia, and the remainder were venereal and trifling complaints. None of them died during the month. Of the detachment of the 77th, 22, or more than three-fourths of their strength, were sent to the hospital in
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the month; viz. 12 with dysentery, five pneumonia, and the rest catarrhal and trifling complaints. The dysenteries of the 75th and 77th regiments were successfully treated with sudorifics, occasional cathartics, and opiates; and venæsection was performed in many instances.

August. During the whole of this month there was only one fair day, the 2d; but, towards the end, the showers were not heavy: it for the most part rather drizzled than rained, and the wind was often high. The thermometer in the shade, in general, moved from 78° to 83°. On the 12th, 13th, and 15th, it was never higher than 80°, or lower than 78°. On one day, in the end of the month, the mercury got up to 84°. In the 88th regiment, the number of admissions was still considerable, and the proportion of deaths great, viz. five. Of 31 cases of dysentery that occurred, a great many were relapses, and we found many of them the severest and most tedious cases that ever occurred to us. The four cases of hepatitis were very acute, and venæsection, blisters, and cupping, were of the greatest service. Three more cases of scurvy occurred. The two cases of splenitis were very acute. Two of the men with dysentery passed lumbrici by stool; one vomited them up, and in another they were found in the colon after death. Of the five deaths, one only had been taken ill in the month.

The detachment of the 84th sent fewer men to the hospital during this than in former months; but we had still many of their severe liver cases, three of which were of very long standing. One of the recent cases died. Of the 75th, a considerable number still appeared. The prevailing diseases were dysentery and pneumonia. One of them died. The 77th was nearly in the same situation. One case of fever died, but nothing could be discovered on dissection.

September. In this month there were some fair days, viz. 5th, 13th, 17th, 19th, 20th, and 22d. In the shade, the range of the thermometer was, in general, from 79° to 86°. On the 25th, 26th, and 27th, it rose to 87°. During the last ten days, we had much thunder and lightning, and the heavy showers were succeeded by very close and sultry weather. On the whole, this month proved rather favourable to us. In the 88th regiment we lost four men: but one of them had been ill since June, and the three others since July. Of the 31 dysenteries, nine were treated with nitric acid. Though the two hepatic cases were not so severe as those which occurred in the former month, yet they were attended with much inflammatory diathesis, and were successfully treated, in the beginning, by bleeding and the antiphlogistic regimen, and latterly by the general use of nitric acid. One of them

was dismissed cured in the course of the month. The four cases of ascites did well by giving them calomel, cream of tartar, and squills. Four more cases of scurvy appeared, and the first case of the Guinea worm, a disease which afterwards so much infested us, made its appearance. The detachments were all embarked to join their respective corps on the 13th. But the whole detachment of the 75th, and the sick of the 77th and 84th, were relanded on the 18th, owing to a causeless alarm of the captain of the ship in which they were. Of the 84th there went to the hospital, before their embarkation, 14, and two afterwards. Two of them died, both of hepatitis; one of them a very old case, and the other had been taken ill in the former month, and he was the only case of the disease that had appeared among the recruits. Three serious cases were admitted from the 77th, and a considerable number from the 75th, almost all of which were severe. One man, who had been three months ill, died. On the whole, at the end of this month, we had fewer serious cases in the hospital than in either of the three former.

October. We experienced, in the course of this month, a great variety of weather, and great alternation of heat and cold. The month began with very sultry weather; the heat daily increased, and we expected no more rain. There was much thunder, which we hoped was to close the monsoon; the wind was for the most part northerly. On the 10th and 11th we had a little rain. On the day of the full moon, viz. the 16th, as well as on the three days precedent and subsequent to it, we had several heavy showers. After this, it continued fair till the 27th, on which, and on the 28th, there was much rain, a little on the 30th, and a great deal on the 31st, on which day it blew a hurricane. The thermometer had a wide range, but as, during this month, we changed our situation, a distinction is here necessary; from the 1st to the 8th, at Culaba, it moved from 78° to 89° in the shade. From the 9th to the 31st, in the fort of Bombay, it was never below 78° , nor above 88° , and, standing in the sun, the highest point that it attained was 95° . On the 31st, in the shade, the mercury moved between 74° and 78° during the whole day. It ought to be mentioned, that both thermometers were suspended in the hospital, which is surrounded on one side with a wet ditch, and is perhaps the coolest situation in the fort of Bombay. The 88th regiment marched on the 8th from Culaba, and took up the quarters of the 86th regiment in the King's barracks. The 86th went to Culaba. In the beginning of this month we had few admissions, and none of them cases of serious disease; but towards the middle of the month, and immediately after the heavy rains, our admissions were numerous, and all of them serious cases.

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They differed from the diseases we had lately seen the most. From the 13th to the 23d, 17 cases of fever appeared; they assumed different types latterly, with the symptoms of hepatitis, and in seven the bowels were affected, and they were treated as dysentery. This is mentioned, because, in a majority of the cases of dysentery which appeared hitherto, there were no febrile symptoms. The case of splenitis was very acute. Of the six cases of hepatitis, three originated in the present month. All the hepatic as well as splenitic cases were treated with nitric acid. There were six deaths, of which two were from illness contracted in the present month: the others were in the hospital since July and August.

The second case of the Guinea worm appeared after we marched into Bombay. The sick left by the detachments all recovered, and, about the end of the month, were sent to join their regiments.

November. The stormy weather which ushered in this month, and which, on the 1st, was particularly boisterous, being the day of new moon, continued till the 3d. From this time, a little rain daily fell till the 7th, when a great deal fell; but, after this, it continued fair till the end of the month. The wind was variable, but ofteneft from the north. The thermometer continued to fall, and, before the middle of the month, we felt that the cold season had fairly set in. The mercury had an extraordinary wide range from 68°, 50°, to 130°, in the open air. Such a variation of climate in one day, and in one situation, we expected would have been attended with proportional sickness. The mornings were foggy, raw, and cold. From seven to ten o'clock in the morning, the wind was hot, dry, and scorching, which, in many, occasioned a kind of erysipelas: the middle of the day was refreshed by the prevailing wind; but the evenings were very damp, and much dew fell. In the course of the month, more dysenteric cases were sent to the hospital than in the three preceding months; but many of them were relapses from old diseases. More cases of hepatitis appeared than in either of the two former months. Of the four deaths, three had been from sickness of many months, and the other had been ill since October. In the case of phthisis pulmonalis, much benefit was derived from lowering the atmosphere in which he breathed. Two more cases of Guinea worm appeared, and a severe enteritis. At the end of this month, there were fewer sick than in any of the six months before.

December. This month set in with weather much the same as prevailed during the last. The thermometer seemed to be getting lower.

lower. It was generally at 76° in the morning, and seldom above 83° at noon, in Bombay.

On the 4th, orders arrived for the 88th regiment to embark next day. On the day following, every man of the regiment, with the exception of one, appeared on the parade; and this was the man ill of consumption, already mentioned. I met him on his way from the hospital to the parade, and had some difficulty in prevailing with him to return back. Different circumstances prevented our embarkation before the 9th, when 22 of the Company's artillery, with 40 gun-lascars, 106 of the 86th, and 453 men of the 88th regiment, embarked in the *Minerva*, a ship of nearly 1000 tons burden. Her crew, amounting to 145, besides some native followers of the troops, made a total of more than 800 men on board; and she, besides, had a great part of a cargo, and many stores on board. I am thus particular, as I think the sickness which prevailed during the next and the following month is principally to be attributed to the situation of the troops on board the *Minerva*. We sailed on the 9th, and on the 29th dropped anchor in Point de Galle roads, in Ceylon; and on the 30th all the troops were landed. The cinnamon storehouse was assigned to the detachment of the 86th and the 88th regiments for barracks. It proved dry, and very healthy. The quarter for the artillery was not so good, it being a low, damp room. The weather, from the time we left Bombay, till we got within two degrees of Cape Comoria, was much the same as we had experienced at Bombay. The wind for the most part was S. or S. W. As we approached Cape Comoria, however, we had rain, which increased the nearer we came to the opposite coast of the peninsula, where the monsoon was still in full force. The thermometer, from the 10th to the 22d, ranged from 77° to 81°. From the 22d to the end of the month, it continued between 76° and 80°, unless on one day, the 28th, when the mercury got up to 82° 5'; and, during the three last days of the month, the rain was as constant, and as violent, as in the severest days of the monsoon. From this weather the men suffered severely. As many as could be crowded below were kept on the orlop-deck and gun-deck; but nearly 200 men could not find room below, and were of course constantly wet. The detachment of the 86th regiment was kept on the poop during the passage. In two small brigs, the *Fancy* and *Shannon*, about 200 hospital and other followers were embarked, who, being equally crowded, suffered nearly in the same proportion with the troops. The number of sick that appeared in the course of the month was not very great; and very few applied till nearly the end of the voyage.

In the 88th regiment, the number of men ill of hepatitis was
nearly

nearly double what it had been in any of the eighteen months during which the regiment had been at Bombay. In all of them the symptoms were very acute. On the other hand, the number ill of dysentery was not more than half what there used to be during the same period. Of nine cases of fever, two were intermittents. Six cases of the Guinea worm appeared in this month.

Of the detachment of the 86th regiment, in the course of 21 days, 15 cases of disease occurred, and all of them very serious. Of these, two cases of hepatitis appeared, which both pointed externally. In one a cure was effected, but the other died. There were also nine of dysentery, all of which were as severe as we had ever seen; one of Guinea worm, one of intermittent fever, and one of ophthalmia.

In the artillery there were two cases of dysentery; one of which was particularly severe.

Among the ship's company, particularly the lascars, there were many pneumonic and catarrhal cases; besides three of intermittent, and one of tetanus.

Jan. 1801.—The diseases of this month, as we expected, were much more considerable than in the last month. The situation of the fort of Point de Galle is very favourable to health. It is built on a rock, which forms one extremity of an extensive bay. The site is elevated, and the Dutch have built here a very handsome town. There being no water at hand, it is luckily free from the usual ornaments of a Dutch town, dykes and ditches. Perhaps more cannot be said for Point de Galle than the situation of the 19th regiment of foot there; which, three months before our arrival there, had returned from an expedition to Candy with about half their number sick, and at this time they had only 15, out of 300, men sick.

On the 7th, the total number of sick from the artillery, 86th, and 88th regiments, amounted to 70. At the end of the month it did not exceed 30. The month set in with rain, and continued so till the 12th; after which there was rain only on one day, viz. the 27th. The thermometer was seldom below 77°, nor above 82°, in the shade, and in the open air 108°. The number of sick of the 88th regiment was 44, of which one died suddenly, and there was no opportunity for inspection. Of the four cases of hepatitis which appeared, three had the disease before at Bombay. The dysenteric cases mostly were men that never had had the disease before. The detachment of the 86th regiment had 16 sick, two of whom died. The diseases were; hepatitis two; dysentery twelve; fever one; pneumonia one; and Guinea worm one; which last was brought from Bombay. The artillery, be-

rides several venereal, had two cases of hepatitis, which were very acute. The gun-lascars had pneumonia very generally. The ship's company had a great number of pneumonic and rheumatic cases.

On the 3d of the month, the Honourable Company's gun-brig the Panther, with three gun-boats, arrived from Bombay, bringing 30 more artillery and lascars, all healthy. The only sick they had were three venereal cases.

Of the native followers, three died of fever. Pneumonia and rheumatism prevailed very generally among them, and they had also some ill of dysentery.

February. In this month we left Ceylon. The troops were all re-embarked on the 14th. Eight companies of the 88th regiment, with 22 artillery and four lascars, remained on board the Minerva; and they are the only part of which, after re-embarkation, I can give any account, at least at present. Two companies of the 88th regiment were sent into the Fancy with Mr Bruce; the detachment of the 86th, with some lascars, into the Hope, with Mr Hoyes; and the followers were sent on board a vessel hired for the purpose. At Point de Galle some rain fell on the 15th and 18th; and the wind was, in general, easterly. The medium height of the thermometer in the shade was 85°, and in the sun 106°.

On the 19th we sailed; and for the remainder of the month continued beating up the Malabar coast. On the 23d, immediately after passing Cape Comorin, we had heavy showers; but it continued fair during the remainder of the month. In the 88th regiment, there was less sickness than during any month since their arrival in the country. The two cases of hepatitis were both recurrences of former complaints, and the dysenteric cases were, in general, slight. The detachment of the 86th regiment, during the first fortnight of the month, had one case of fever, and two of hepatitis. There were also four ill of dysentery. In this period three died.

The artillery had one death from hepatitis, and another case of the disease also appeared.

The gun-lascars were healthy, as were also the crews of the Panther and gun-boats.

The ship's company had six pneumonic cases, four venereals, two cases of Guinea worm, and one of malignant ulcer.

The difference of susceptibility to the variolous contagion, in this country and in Europe, was formerly remarked: another striking proof here presented itself. At Point de Galle, during our stay, the small-pox prevailed very generally, and proved fatal to the natives, the Cinglese, Malays, and Portuguese, who
mix

mix much with them. It likewise appeared in a few Dutch families. But of the 19th regiment, or of the troops from Bombay, no person had taken it. On the day we sailed from Galle, a sick native follower, one of our bakers, was shown to me, and, on examination, I found a large crop of confluent variolous pustules on him, which could not have been out less than two days. He was immediately sent on shore; but no one on board caught the infection.

March. From the 1st to the 29th of this month we were beating up for Bombay, and dropped anchor off that place on the 29th, the wind being north-westerly. As we passed near the extremity of the peninsula, on the 3d, there was rain, and lightning on the 11th, 13th, and 14th. After this, we experienced the usual fair weather of the season on the western side of the peninsula at this season.

The thermometer, till the 3d, continued equally low as in last month, when we were at sea. On this day, the wind being southerly, the mercury rose to 85°. On the 19th, 20th, and 22d, it stood at 87° at noon. On all the other days, it varied from 78° to 83°. In Bombay harbour, which, as seamen express it, is landlocked, the thermometer at noon moved from 87° to 90° on the gun-deck. The number of sick was less, but the mortality proportionally greater, than in any other month since leaving Bombay in December. Of the three deaths in the 88th regiment, two were from sickness contracted about the 23d of December: both were attacked with pneumonic symptoms; and it was not until the last three weeks of their illness that the symptoms indicated an affection of the liver. The other man who died had been ill, since the 3d of February, also of hepatitis. On the whole, the state of the regiment at sea this month was very favourable: The proportion of actual sickness is not more than one-twelfth or one-thirteenth part of the strength, which is less than at any preceding period. For the first time, no case of hepatitis occurred during the month. There were ten ill of dysentery, of whom seven were recent, and had never had the disease before. There was only one case of pneumonia, which proved mild. Of Guinea worm, 103 cases occurred during the month.

In the artillery there did not occur any sick this month. A severe case of dysentery, sent to the Minerva from one of the gun-boats at Ceylon, died in this month. Among the ship's company two cases of dysentery occurred; seven of pneumonia; five of rheumatism; two of Guinea worm; and two venereal complaints. In an obstinate case of intermittent, of five months duration, which had resisted bark, mercury, arsenic, and several other remedies, a cure was effected by the nitric acid mixture

bath. This appeared the more surprising, because, in some instances that occurred, the acid bath had been suspected of occasioning intermittent.

April. We commenced this month in Bombay harbour, where the heat was intense. There was some change in the arrangement of the troops made here. Six of the 88th regiment, and the whole of the artillery, were sent on shore; and 40 men of the 88th, who had been left in December, were received on board.

On the 3d we sailed for the Red sea. The thermometer, which, in Bombay harbour, was from 88° to 90° in the shade, ranged, between the 3d and the 10th, from 78° to 82° . On the 11th and 12th it continued the same. On the 13th and 17th it was stationary at 79° and 80° . On the 18th, when we were between Cape Aden and Babelmandel, it rose to $83^{\circ} 50''$. On the 19th we anchored in Mocha roads, and sailed the day following. The thermometer now continued to rise till we reached Judda on the 27th, when it was 89° in the shade. On the 28th, a north wind brought it to move, during the day, between 78° and $80^{\circ} 50'$, and this continued during the remainder of the month. The wind was variable. It blew, in the beginning, from the S. and S.E. and in general N. N. W. On the 22d and 23d there was lightning and calm weather. Having heard it asserted, that in the Red sea, the quantity of salt, kept in solution in the sea-water, was very great, I made trial of water from the surface; but I found the quantity much the same as that discovered to be contained in the water of the Mediterranean. It was likewise said that the dews were very heavy; but as far as I could ascertain, by weighing the quantity fallen in a given time at night on a piece of lint six inches square, there was not more than usually falls in Bombay. The sickness of the month was considerable, but no one died. Only one case of hepatitis appeared, and the disease was speedily subdued. It is remarkable, that as many cases of dysentery occurred during the first eight days after leaving Bombay as in the whole of the preceding month. After the 13th only two cases occurred. The number of men ill of the Guinea worm, at one time, was truly alarming: it amounted to 160. Many of them had very bad ulcers; and, in fever, mortification took place. In the course of the month, 46 men were admitted with this disease.

Among the ship's company there occurred two cases of dysentery, ten of pneumonia, two of syphilis, thirty-four of itch, and two of ophthalmia.

May. In the beginning of this month we were endeavouring to keep to sea, as it blew a very strong gale from the N. and N. E. It was calm on the 4th, but the wind increased in the evening, blowing

blowing from the south. At this time the Honourable Company's ship Cornwallis of 50 guns, with transports conveying artillery, and two battalions of sepoy from Judda, joined us; and we sailed on the 5th for Koffier, where we arrived on the 18th, and disembarked on the 20th. This was the first part of the army which encamped in the desert of Koffier. Some days following, the 10th, 61st, and 80th regiments, also landed, and encamped, as well as the battalions of Bombay and Bengal sepoy. The former were very unhealthy, and had suffered much on the passage from remittent fever, which prevailed in the greatest degree in two ships, the Cornwallis and Milford. The first battalion of the 7th Bombay sepoy regiment landed 300 sick. In one of the ships, several men were ill of the scurvy.

The prevailing wind during the month was N. W. There was no rain; but we learned that, a short time before our arrival, it had rained at Judda and Koffier, and that it was a very uncommon phenomenon at both places. For the first three days, the thermometer was from 77° to 80°; on the 4th and 5th, from 80° to 84°; from the 6th to the 11th, it ranged from 77° to 80°; from the 12th to the 15th, it moved from 82° to 88°. On the 16th, 17th, and 18th, it was from 77° to 80°. On the 19th and 20th, in my cabin in the Minerva, it was at 75° at six in the morning, and at noon it stood at 86°. The ship was then moored close to the shore in Koffier harbour. In the camp, the thermometer was said to be 15 degrees higher. We commenced the month with more actual sickness than last month: the great and sudden change of climate which we experienced in the last days of April was very generally felt. There were many instances wherein the chest was affected, and in some the cold appeared evidently to be the *exciting cause* of dysentery. We had no case of hepatitis. Of the ten men ill of dysentery, all got well in the course of the month, excepting one, in whom symptoms of diseased liver appeared. Only eight recent cases of Guinea worm occurred.

The ship's company had one man ill of hepatitis, one of dysentery, six of pneumonia, and two of Guinea worm.

At the end of the month the regiment was in a favourable state. The whole of the sick did not exceed thirty; yet the heat was intense, the regular duty severe, and, preparatory to the march to the Nile, there was much duty of fatigue, which, from a want of native followers, who usually do it, was done by the soldiers themselves. The camp was situated on a dry, hot, sandy desert; and the only wind felt was an extremely scorching one, which generally set in about ten in the morning, and lasted till three o'clock in the afternoon. One circumstance appears to de-

serve notice : the little water that could be procured was strongly impregnated with vitriolated magnesia ; and no one escaped a diarrhoea, which, perhaps, had a salutary effect. In this month we lost one man from hepatitis, and another from dysentery.

The town and fort of Kossier, built of mud, is situated in latitude 26° N. on the west shore of the Red sea.

From the above sketch, I will not venture to draw many inferences, though many obvious, and some useful, appear to present themselves. On taking a review of the last and of the present year, it still appears that the most unhealthy months are those in which the seasons change. When the seasons of the two last years at Bombay are compared, that of the present appears to be the most unfavourable in many particulars. The rains set in much earlier, were much heavier, and continued much longer, than in the former year. The dry season, too, was proportionally hotter. In this unusually severe season, the men suffered much from the peculiar situation of the barracks on the island of Culaba. Sixty cases of dysentery admitted in July are very considerable ; but, in July 1799, we admitted 129 cases. Here, then, we appear to have gained by being more than a year inured to the climate. From the state of the men of the 88th regiment at the end of November, and in the beginning of December, when ordered for service, we may venture to affirm, that the regiment would have been more healthy, and that fewer deaths would have occurred in the subsequent months, had they remained at Bombay. The situation of all on board the *Minerva* sufficiently accounts for the many liver and dysenteric cases occurring in December and January. The same causes seem uniformly to produce both diseases, and the same treatment is equally successful in either disease.

For the last 18 months, in the hot season, the men were daily marched two miles to the fort of Bombay, were much exposed to the sun on the garrison-duty, and, in the heat of the next day, were marched back to Culaba. Yet it appears, by the tables of both years, that the hot months were, *ceteris paribus*, the most healthy. If heat be noxious, something in this instance obviated its effects. Was this exercise ? An instance in point, though not within the date prescribed, will illustrate this. In June and July 1801, the degree of heat, on a march of 130 miles over the sandy desert of Thebes, and on the banks of the Nile, in Upper Egypt, was extreme. I have seen the thermometer, in a soldier's tent, at 118° . The soldiers had, at the same time, to combat with severe duty, from being without native followers, and the effects of the pernicious drying wind peculiar to the country ; yet, under all these circumstances, the health of the troops was equal

equal to what it had been at any former period in India. Heat of itself, then, does not appear to be the principal cause of the prevailing diseases.

On looking over the returns, and observing the proportional sickness of different periods, a periodical increase was very striking. The eight or ten days that followed the payment of the balance of pay due to the men regularly produced much sickness. The soldier's pay in India, as in England, allows him at times to indulge in excess. He is amply supplied with provisions, and perhaps the usual allowance of arrack issued to him is too great. In the rainy months it is half a pint daily, and, in the dry season, it is half this quantity. As the price of arrack is low, he very often procures as much as he can use; besides which, he has often access to tarry, or toddy. Some degree of intoxication and irregularity is perhaps unavoidable. Intemperance has hitherto always appeared as a principal cause of the diseases which prevailed. On the march over the desert, and on the voyage down the Nile, no spirits were issued in July and August 1801; yet the army, in general, were uncommonly healthy.

The catalogue of diseases is more extensive than that of last year. Perhaps our frequent change of situation might have contributed to this. In the diseases of the present year we could, in general, observe less vascular excitement than in the first year.

A majority of the dysenteric cases appeared either immediately after the setting in of the rains, or in the course of the rainy season. In some cases, we could trace the exposure to moisture as the cause of hepatitis and dysentery. The suffocating heat that followed the rains perhaps aided as a cause, and still more, perhaps, the inactive state of the men during the wet season. On the idea that inaction aided as a principal cause, the commanding officer ordered, that in this season, when it was fair, the whole regiment should be marched out for an hour; and, while the men were thus exercised, the barrack-rooms were aired and dried, the whole of the bedding and furniture being kept out. Yet, notwithstanding this, and, I believe, every attention which could be paid to men by officers, during and after the rains, the number taken ill was very great.

Though, perhaps, a residence for a certain length of time, or a naturalization to the climate is necessary, yet one reason may, with probability, be brought forward to account for the difference in point of health between European and native corps. A native of India is astonished at first to see the meals of animal food devoured, and the quantity of spirits drunk by Europeans.

There can be little doubt, that the nearer we approach to the mode of living of the natives, the more nearly we shall attain their state of health.

The same disease appearing in India and in Europe differs materially in several points, and requires a different treatment in each country. Hepatitis, for instance, is a disease which makes its appearance frequently. Upwards of 100 cases appeared in the course of the present year, the majority of which were chronic diseases, recurrence of diseases which had appeared in the first year. The '*tussis sicca*,' and '*decubitus in latus sinistrum difficilis*,' were rare symptoms; and there was singultus in only one or two cases. We found not a little difficulty in drawing the line between hepatitis, phthisis pulmonalis, and some severe cases of pleuritis. An accurate diagnosis is here much wanted. Several men were first seized with pneumonic symptoms, and latterly had symptoms of an affected liver. In the course of the present year, a few cases terminated fatally, even after a flow of saliva from the mouth had been excited. In several instances, the gums could not be affected till venæsection had been performed. After this, a small quantity of mercury affected the gums; and, after they were affected, a liberal use of the bark was found to be highly serviceable.

The relapses of this disease and of dysentery were more frequent than in any disease which I recollect, not excepting fever. Bleeding and cupping, on the first attack, cut short many cases of the disease. A swelling pointed externally only in three instances; and in only one of these was I allowed to make an incision. In a man of the 86th regiment, after a pointed tumour had appeared for some days in the side, it suddenly disappeared, and he recovered. In four cases, matter was discharged by stool; and in one a cyst burst, and discharged its contents into the cavity of the abdomen.

There were upwards of 500 cases of dysentery. In the 88th regiment, however, many fewer occurred than in the last year. It would appear that the general causes of this disease differ in India and in Europe; and there is not a little difference in the symptoms. Dysentery was attended with fever but in a few instances, and in these it was the synocha of Cullen. I do not think that scybala were passed in six cases. The tenesmus appears to arise from a different cause. Purgatives do not appear to give the same relief as in Europe, or even in the West Indies. Several cases of a very acute disease appeared, which ran its course in four, five, or seven days. The usual practice did not succeed here. The best treatment appeared to be, after a dose of castor oil, to give opium by the mouth and by glyster, and to make the

the patient drink freely of a solution of gum Arabic at the same time. In some cases I have given diluted nitric acid liberally, with tincture of opium. A constriction of the vessels discharging mucus was in this way effected; the incessant discharge was stopped, and time given for a secretion of mucus to cover the abraded gut. I have thus sometimes succeeded in checking a most violent disease. Thereafter the mouth could be gradually and gently affected by mercury, and by nitric acid. I have nearly divided the number of cases that occurred between the two modes of practice; and, after the utmost attention that could be bestowed, the success of the two appeared nearly equal. As in last year, several succeeded with mercury, after the acid had failed, and *vice versa*; and, after a failure of both modes separately, the conjoined use of them succeeded. For this I can assign no reason. When nitric acid was used, the external and internal use of it was constantly ordered. The mean quantity taken internally in the day was about six drachms. Enemata, in many cases, gave the highest relief. An infusion of ipecacuanha, solutions of vitriolated zinc, and of acetated ceruse, and diluted nitric acid, were frequently employed.

The cases of splenitis occurred in July, and proved tedious. Cupping, and keeping the bowels loose, seemed to be of more service than any thing else. Various mercurial preparations, and also nitric acid, were tried, but appeared to do no good. In one instance, the symptoms of splenitis ended in those of hepatitis.

Of nearly 100 cases of fever which occurred, the greater part were trifling, and originated from inebriety or exposure to the sun. They required only rest, and perhaps a purgative, and the patient recovered in two or three days. The irritation produced by the Guinea worm occasioned a smart fever in several. Thirty cases of intermittent were cured. The fever which appeared in October and November was remittent. In two cases there was at first a great deal of reaction, which ended in extreme debility. These two approached the nearest to typhus of any cases I had seen since my arrival in India. Affusion of cold water seemed, in these two cases only, to succeed, though it was tried in several others. In severe paroxysms of intermittent, the exhibition of opium stopped them; and some of them were cured without the aid of any other medicine. Creät, a bitter root used by the natives, was given as a substitute for the bark, and succeeded in two instances. In all the severe fever cases, the cure was always more speedy and certain under the exhibition.

tion of mercury, until the gums were affected; and several of the worst cases resisted every other remedy.

None of the cases of fever or dysentery appeared to be contagious. A battalion at Kossier had about 300 men ill of fever, and another battalion had 140. In both cases the fever was remittent, and the combined use of mercury and bark was found to be the most successful treatment.

The measles all appeared in June. When the same disease appeared in Europe, it generally made its way through a great part of the regiment. The inflammatory symptoms were mild: the after affection of the eyes was the most troublesome part of the disease. Though the croup was very prevalent both in the town and in the island of Bombay in September, October, and November, and though several adults died of it, yet no case appeared among the women, children, or men of the 88th regiment, or of the detachments.

Many cases of pneumonia occurred, and not a few of catarrh and rheumatism; but, in general, the symptoms were very mild, and the disease was easily managed.

Only one case of well-marked phthisis pulmonalis occurred; and this points out one remarkable difference between the Indian and European climates. For the last eight years, the number of cases which yearly appeared in the 88th regiment was, I believe, never so few as six: in the solitary case which took place this year, reducing his atmosphere had the best effect. Several cases of cholera morbus, and a few of icterus, occurred; but the symptoms were mild, and not of long duration.

Scurvy.—The appearance of this disease in the 88th regiment, situated, as they were, in barracks on the island of Culaba, is not a little extraordinary. As already mentioned, it made its appearance in July, soon after the setting in of the rains, and the number was but small. In the absence of some of the usually assigned causes, I recollect the doubts expressed by the Members of the Board, till inspection convinced them of its actual existence.

The first case that appeared had formerly been subject to the disease on the passage from England, and, on landing in Bombay, he was cured by a remedy in common use in India, the fermenting juice of the cocoa nut tree, called toddy. Nitric acid was prescribed, and got a fair trial, but the citric acid was found necessary to the cure. The next case proved fatal. The most severe scorbutic symptoms appeared, viz. Dyspnæa, contracted joints, livid blotches over the whole body, spongy gums, foetid breath, and, for the most part, an incessant diarrhoea. The appearances on dissection in this case are hereafter taken notice of.

of. The third had his mouth putrid, and the teeth were literally shaking in their sockets, as in a skull. The three next were of a slighter nature. Another had a severe ophthalmia, which had resisted a variety of applications, both external and internal, for five months, when the acid of limes was thought of. In twelve days it effected a cure. The only scorbutic symptoms in this case were, a tenderness of the gums, and a blue sloughiness round the edges of a seton. In four, nitric acid was liberally given, both externally and internally, and persisted in. For ten days the acid afforded relief, but afterwards the disease gained ground; and, in all the cases but one, cures were effected by lime juice, and by giving the fruits of the season. I shall not attempt to account for the appearance of this disease. Moisture, one of the commonly assigned causes, was present. But though the men used but few vegetables in their diet, yet, during the whole time, they were daily supplied with fresh meat.

Tetanus.—A case of this disease occurred, which was treated successfully. As this was done by a mode of treatment which, with the theory which gave rise to it, is, I believe, now considered as exploded, it may not be uninteresting to mention what led me to give it a trial. In the year 1794, the first tetanic case I met with occurred at Bergen-op-Zoom. My hospital steward, serjeant Kirkland, after remaining out drunk the whole night, was, in the morning, found lying in a ditch. This was in the month of August, and the weather was remarked to be unusually hot. When brought to the hospital, his jaws were so firmly locked, that the blade of a penknife could not be introduced between the teeth. Mercury was had recourse to, but, in a few hours, the muscles of the neck became convulsed, and, by the advice of an eminent physician of the place, he was immersed four times a-day into a bath of broth. He continued in it half an hour each time, and, after he came out, his whole body was rubbed over with mercurial ointment, and his gums with calomel. I do not recollect that any thing else was given him, unless a stimulant enema. Next morning the good effects of this treatment were most evident. A violent salivation came on, and, in about three weeks, the man was doing his duty. In the next case which occurred, though a cure was not completely effected, the same treatment was for some days attended with good effects. In the island of Grenada, a negro, attached to our pioneers, received a contusion and a slight wound on the head. The warm bath and the liberal use of mercury were ordered. He continued better for some time, and I flattered myself with the hopes of another cure; but the disease gaining ground, the cold bath and tonic treatment were had recourse to,

to, and the patient died. The next was a sailor; who, a few days before our embarkation in the *Minerva*, had been slightly wounded in the foot by a copper nail. On my first seeing him, his symptoms were slight, but were gaining ground very fast. On the 10th of December, the day after our embarkation, he had the most violent symptoms of the disease; the jaws were firmly locked, the muscles of the neck, before and behind, were strongly convulsed, and he had twitchings of the muscles of his face. He pointed to the region of the stomach, where he afterwards told me that he had intolerable pain and sickness. He was immediately put under the same treatment as was employed in the case of the serjeant, with this difference, that, instead of broth, a bath was made from fat, or what is called slush. The same success attended, but the symptoms yielded more slowly, and it was several months before he recovered.

Guinea worm makes a considerable figure in all the reports during the last six months. Having never seen or heard much of this disease, and, at a time when the regiment was overrun with it, being without medical advice and assistance, I was not a little perplexed. Latterly I flattered myself that I succeeded in treating it, and that I had made some discoveries regarding the disease; but as probably my observations are only those of others, and may even be contained in books, I shall only mention the manner in which the disease made its appearance. In September 1799, the 86th regiment relieved the 84th in the fort of Bombay, where they remained until October 1800, at which time they were relieved by the 88th regiment from Culaba, as already mentioned. The 86th regiment was free from the disease on coming into the fort, and continued so till the setting in of the monsoon of 1800. The King's barracks in the fort are situated close to the Bazar, where, at the beginning of the monsoon, it was observed, Guinea worm prevailed very generally among the natives. In the course of the monsoon, 200 cases of Guinea worm appeared in the 86th regiment. The 88th regiment, from the time of their arrival in June 1799 till October 1800, were quartered at Culaba. In all this period they never had but one case of Guinea worm, and this happened in the end of September, and in a subject debilitated from hepatitis and dysentery. None appeared in October; but, in that part of November which immediately preceded our embarkation, three cases appeared. During the voyage to Ceylon six occurred, and all remarked, that the case in the 86th regiment preceded these. The table shows the progress of the disorder thereafter; and it will be observed how very rapidly they increased on shipboard. The officers took notice that it prevailed most in particular parts of the ship,
and

and more in one company than in another. This so much struck the commanding officer, that the sick were separated from the found. The men with Guinea worm were kept on the orlop, and the others on the gun-deck. Whether from this precaution, or whether the disease had by this time run its course, after pervading three-fourths of the regiment, we observed a gradual decrease, as will appear by the table, after this period. One circumstance was too remarkable to escape the observation of any one on board. In the detachment of the Company's artillery with us, not a single case appeared, although they ate the same provisions, drank the same water, and, in every other circumstance, were as the men of the 86th and 88th regiments; but they were always kept separate, and, during the whole voyage, were accommodated apart on the gun-deck. A good deal of attention was paid to this disease in all its stages, and several experiments were made on the worm, which will be better detailed hereafter. After using a variety of articles, and making them enter the limbs by absorption, I think I have succeeded in killing the worm by rubbing in unctuous substances, particularly strong mercurial ointment. Passing an electrical shock through the part had no visible effect.

The ophthalmia which occurred was very severe, and required scarification, and the antiphlogistic regimen to its fullest extent. I heard of a species of ophthalmia symptomatic of hepatitis; an instance of which occurred in an officer, which resisted all the common means, until his mouth became affected with calomel.

In a case of varix of the saphena, the operation recommended by Mr Everard Home was performed, and a ligature passed round the vein, four inches above the knee; but a cure was not effected. The man was tall, above 50 years old, and the disease of many years standing.

Two instances of suspended animation occurred. In one of them, a soldier of the 86th regiment, who had remained about half an hour in the ditch of the fort, we failed. The other, who had been only a few minutes under water, Captain Trotter, recovered, by putting in practice some of the means recommended by the Humane Society.

Dissection was performed, and the appearances after death noted, in eighteen cases, and minute accounts are preserved. The bodies were inspected from four to 12 hours after death, unless in one instance, where it was not done until after 18 hours. In the 18, fix had an aqueous effusion in the thorax and abdomen, resembling serum, of various colours, and coagulated by heat as far as was tried. Hydropic symptoms were only discovered

covered in one instance before death, but in this the quantity of effused fluid was the most considerable, amounting to five pints. In one case, upwards of a quart of thick pus was found on the surface of the viscera of the abdomen.

The omentum in the greater part was found wasted. In two of them it had a macerated glairy appearance, which might arise from the fluid in which it was immersed. In one case, which terminated very rapidly, there were in both omenta all the appearances of inflammation, and the great omentum seemed to be the principal seat of disease. In another, appearances showed that inflammation had existed; it extended to the boundary of the pelvis to which this viscus was strongly attached; and, in some places, it so girt the intestines, as to have the effect of a ligature on them.

In about one half of the cases, disease had reached the stomach. In the recent ones, almost all the vessels of the villous coat, and near the two orifices, were much distended with blood. The quantity of bile which it sometimes contained was considerable. Our early inspections, perhaps, prevented us from observing, in any instance, the effects of the action of the gastric juice on the stomach. In all the liver cases, the adhesions between the liver and stomach were firm and extensive.

The intestines were more generally diseased than any of the other viscera. In all but three we met with morbid appearances. The large intestines appeared to be the principal seat of the disease. The only marks of disease observed in the small were inflamed spots, contractions of their diameter, thickening of their coats, enlargements of the valvuli conniventes, and intussusceptions, probably all of them the effects of previous inflammation. The cæcum and its appendix, in some cases, were the most diseased. In the cæcum of one man we found several detached yellow lumps, and nine undissolved mercurial pills, little changed. The appendix was unusually large, and contained yellow matter. In most cases, however, the rectum, and particularly its extremity, suffered most. In one instance, so diseased was this gut, that, through the greater part of its extent, nothing remained but its peritoneal coat. Large ulcers near the sphincter ani were a common appearance. In seven cases the cæcum, colon, and rectum, were gangrenous. In one instance, the cæcum was about the usual size of an empty stomach; and the internal surface of the rectum had the appearance of a foul, scorbutic ulcer. The colon was less frequently diseased at its two extremities than along and about the centre of the arch.

The mesentery was not so frequently diseased as we were led to expect. In only ten cases, unusual morbid appearances existed.

ed. In one the mesenteric glands were soft, and the cellular membrane tended to a state of putrescence. In three there were marks of inflammation present; the glands were enlarged, but not indurated; and the blood-vessels were turgid. In the remainder the glands were hard to the feel, but did not amount to what is denominated scirrhus. In one of the cases above alluded to, the mesocolon also was gritty, thickened, and unusually loaded with fat.

In what proportion of cases the liver was diseased, it is not easy to say. If we rank those cases where the liver was of a colour different from the natural, or where there were variegated spots on it, among the diseased liver complaints, we shall find but few exempt from the distinction. Only four of the cases inspected would fall under the description of sound. In two we found abscesses in the right and left lobes. In one there were small cysts, containing pus in all the lobes. In three the vessels were enlarged, the liver of an increased size, with marks of previous inflammation. In one there were abscesses in the right lobe and lobulus spigellii. In another the abscess was in the lower extremity of the right lobe, including the fissure, and erosion there had proceeded so far that it must have soon made its way through the coats of the subjacent great blood-vessels. In one case, the liver was of rather a darker colour than the spleen. In another, it was of a bright cast-iron colour. The liver was also found very small in two instances; in one of which it did not exceed half the natural size, and was harder than natural, but without the gritty feel of scirrhus. In nearly all the other cases, the liver was larger than the usual size. It sometimes filled both hypochondria, compressing the stomach and spleen, and touching the ribs of the left side. The weight was not always proportioned to the enlargement. The liver sometimes had a soft feel. In one case, however, where the enlargement was not so considerable as in many others, it felt very firm, and weighed five pounds. Here there were marks of inflammation on all the inferior portion of the right lobe, particularly near the portæ. In a case of long standing, there seemed to be more disease than in any other: the pori biliarii were full of a matter of a consistence between that of serum and pus. Was this a morbid secretion? We found adhesion between the liver and peritonæum in eight cases; but there was an external prominence in only three cases. In one of these an incision was made betwixt the 7th and 8th ribs; but the case proved unsuccessful. In none of the cases did we find a communication between the liver and the lungs. Of the four cases where no marks of diseased liver could be seen, two were cases of fever; one of scurvy, who had laboured latterly

terly under every symptom of hepatitis; and the fourth had, for four months before his death, every symptom of the disease.

There was in general little disease either in the gall-bladder or biliary ducts. In ten cases the gall-bladder was found distended. In one the ductus communis was impervious. In none of the cases did we find a calculus. In another, though the vesica fellis was not much distended, there were marks of inflammation; the vessels of the external coat were turgid, and there was an intimate adhesion to the stomach, and the gall-bladder contained a heterogeneous fluid. In the ten cases mentioned, the gall-bladder contained from two to four ounces of bile of different colours, consistence, and probably of different qualities. It would have been agreeable to have observed this, and to have compared it with sound bile.

The spleen had seldom the marks of disease. In the consistence, colour, and weight, there was a considerable variety. In one it was very soft, and about two inches of its right extremity were eroded. In another it was inlaid in all its dimensions, and weighed very nearly 12 ounces. In two instances it was found very small. In different subjects there was a considerable variety in the colour, consistence, and dimensions of the spleen, but less of what we could discover to be disease, than in any of the viscera already taken notice of. In one it measured more than six times the natural size, and the left extremity was destroyed by the matter which floated in the abdomen. It was large, and its vessels distended, in another; and, in a third, it was enveloped in glairy matter.

We found very little change in the urinary organs: from proximity the kidneys were sometimes affected; and there were adhesions to the colon and mesentery. In one case we found watery vesications on their surface.

The morbid appearances in the thorax were confined almost exclusively to the lungs and pleuræ. No case was free from adhesions. In many cases were found polypi in the cavities of the heart. In one instance, the upper edge of the right lobe of the lungs contained a vomica, in which was about an ounce and a half of whey-coloured serum. The contiguous portion of the pleura was eroded. The right lobe, in general, felt hard, and sometimes tuberculous. In one instance, the right lobe adhered very extensively and firmly to the pleura and diaphragm. In one of the scorbutic cases, the blood in the heart was very dark and fluid. In the right ventricle was found a portion of coagulable lymph branching from it to the pulmonary artery.

In one case we found a small lumbricus in the colon, and, in another, a live worm, of the same species in the duodenum.

Five small worms were found in the cœcum of another, of a description nearer to that of lumbricus than any other worm, but not so broad, and only two inches in length.

In three cases we found intromissions in the ileum.

In the scorbutic case, above referred to, we found, on dissecting the teguments and fascia of the right thigh, the sartorius muscle black and mortified for several inches above its insertion into the tibia. The lower end of the vastus internus, and a considerable portion of the neighbouring cellular membrane, had the same appearance. What was particularly remarkable is, that there was hardly any external mark of such extensive disease except a slight discolouration. The body was inspected seven hours after death.

III.

A Case of Compound Fracture of the Humerus, from a Gun-shot Wound, in which Amputation was performed at the Shoulder Joint. By R. WATSON ROBINSON, M. D. F. L. S.

My only intention in drawing up the following case is to relate the history of an operation, of which very few detailed accounts are to be found in the records of surgery. I do not profess to offer any thing new, nor do I recommend any particular directions which are to be met with in the systems of surgery. Mr Bromfield has published, at some length, a history of this operation, in his *Observations on Surgery*; and a similar case is given in a pamphlet on amputation, published by Mr Alanfon of Liverpool; in both of which is contained every important instruction: yet as the accumulation of facts must tend to confirm our judgment, and strengthen our resolution in points of difficulty in practice, it is hoped that the following case, in addition to those above mentioned, will neither be uninteresting nor useless.

On the 11th of July 1803, I was called to the assistance of Hugh Shields, a poor man, in the 53d year of his age, employed as night-guard to the extensive works belonging to Mr Horrocks of Preston. I learned that, when going his usual rounds at one o'clock, he had carelessly put the butt end of a blunderbuss; loaded with slugs, into his left coat-pocket, and had allowed the barrel to lodge between the side of the body and the arm; in

which position the piece went off. I saw him in less than half an hour after the accident, and observed the following appearances. The integuments covering the left breast and clavicle were discoloured and tumefied, and there was an extensive laceration of the skin, from the clavicle near to its humeral connexion across the folded edge of the pectoral muscle, and extending more than half-way down the side of the chest. The arm was literally beat into pieces; the skin covering the inside was torn from the elbow across the border of the pectoralis major, and as high as the collar bone, and lay reverted on the posterior part of the arm; the muscular substance was rent into irregular portions, and beat into a pulpy mass; the humerus was splintered from the elbow to within an inch of the shoulder joint, and many pieces were forced into the flesh. The acromion was fractured, and a few shot-holes were observed above the point of the shoulder. The ribs were not injured. It did not appear that the brachial artery was divided, although the hemorrhage had been very considerable. The patient was sleepy; his pulse feeble and quick; the breathing slow, but free; the countenance had a cadaverous appearance, and the extremities were cold. This examination of the limb satisfied me, that nothing but immediate amputation at the shoulder joint could save the life of my patient. I therefore requested the assistance of my friend Dr Low in consultation, and he agreed with me in this opinion.

Preparatory to the operation, the man was seated on a chair, and was supported by an assistant placed on each side, whilst a third person raised the arm to nearly a right angle with the body. The first incision was made with a common round-edged scalpel through the integuments, beginning at the inner edge of the deltoid muscle, carrying it downwards in a semicircular direction, and continuing it to the middle of the axilla, on the outside of the axillary artery: then, turning the edge of the knife upwards, the deltoid and posterior muscles were divided obliquely down to the bone, from which they were separated so as to expose the joint. An assistant was now directed to make firm pressure on the subclavian artery, as it passes over the first rib; while, with the same knife, I attempted to form the flap on the opposite side, by dividing the integuments in a direction, from necessity, the reverse of the former, *i. e.* with the concave edge towards the breast. In this way, I thought that the round border of the outer flap might be conveniently adapted to the concave edge of the inner one, by which means the face of the stump would be made smooth and even. After this division of the skin, the edge of the knife was turned upwards, and the muscles divided as on the opposite side. Immediately there was a considerable

able gush of blood; but it was soon stopped by the fingers of the assistant, until the head of the bone could be disengaged from the socket, and then it was secured by passing a crooked needle and ligature round it. After the fractured portion of the acromion was removed, and the rough extremity of that process made smooth, and all the small pieces of bone picked out, the flap was brought forward, and was retained to the opposite side by means of three futures, and small pieces of adhesive plaster. The ligature was left to hang out at the inferior angle of the wound. In the same way, the lacerated integuments of the chest were brought together and secured. Lint dipped in the traumatic balsam was applied over the adhesive plaster, and over all a compress of linen. The whole was secured by the flannel roller.

I called upon my patient in about seven hours after the operation, and was informed by the gentleman who had been left to watch the stump, that he had continued very quiet, and had slept two hours. He complained of a slight twitching in the stump, and of soreness about the breast. The skin was hot and dry, the pulse quick, and rather full; the tongue dry and white. He was distressed with headach, to which, he said, he had been subject for some years: He had taken freely of cold water to remove his thirst, and had used the urinal, but he had not had a stool. He was ordered to take freely of barley water acidulated with lemon juice, and the saline mixture in the state of effervescence: a laxative enema was immediately injected, and a draught, with 35 drops of laudanum, was directed to be taken in the evening. The febrile symptoms soon left him; but he appeared dejected, and complained of anxiety about the præcordia. A cordial aromatic mixture, with a more generous diet, and a moderate allowance of Port wine, soon restored him to his usual health.

The dressings were removed on the 7th day after the accident. The discharge was offensive, and in considerable quantity. The inferior angle of the sore looked black and sloughy, but the middle and upper portion had united by the adhesive inflammation. The swelling and lividity of the surrounding parts had, in a great measure, disappeared, and the pain of the stump was so inconsiderable, that the patient could allow it to be handled with freedom. On the 12th day, the ligature was thrown off, and the futures were taken out; and, as the discharge had abated very much, I brought the separated edges of the inferior angle of the stump in contact, and retained them firmly together. In less than five weeks the wound was nearly healed, a small sinus only remaining, through which a glairy fluid was discharged; but it gradually closed, after the daily use of an injection composed of

lime water and spirit of wine. For three or four months afterwards, small abscesses occasionally formed in the cicatrix, from which a small portion of bone was usually discharged : but nothing of this sort has happened since that time, and the patient has continued in perfect health. I may here remark, that the face of the stump is not now so smooth as it was for some time after the cure, owing, no doubt, to the absorption of the muscular substance of the flap, from the inactive state of these parts.

To the practical reader this case will suggest a few reflections, and, first, as to the best position in which to place the patient for the operation. Many experienced surgeons direct him to be laid on his back on a table, so that the injured arm may be brought over the edge of it. Heister thinks it most convenient to the operator that he should sit on a chair, as in the case just related ; while Professor Callisen prefers laying him on his sound side on a table. This last position, I should think, would be the easiest to the surgeon, and therefore preferable to the two former, and the first appears the most objectionable. When the patient is laid on his back, the surgeon has not the same command with the knife, the arm cannot be raised to any convenient height, and he is fatigued with stooping.

The plan of the operation must depend upon the nature and degree of the accident or disease which requires it. When an abscess or caries in the joint is the cause, we have our choice in what way to form the flap ; but this is not always the case in compound fractures from gun-shot wounds, &c. Our object is to save as much skin and muscle as will cover the joint. It would be superfluous to describe the different methods employed by Mr B. Bell and Mr Alanfon in the operation, as the reader may find them detailed in their respective writings. Mr Alanfon's mode is less complex, and can be more speedily executed. In Hugh Shields' case, the skin was torn as high as the clavicle, across the folded border of the pectoralis major ; consequently a sufficient quantity of skin could not be had to form a flap equal in breadth with the outside one. I was therefore compelled to operate in the way I have related. By forming the flap on the outside, I preserved a sufficient quantity of skin and muscle to cover the joint completely, and to reach the sound parts on the opposite side : the fleshy deltoid filled up the cavity, and the face of the stump was thus made smooth and even ; though, no doubt, the removal of part of the acromion contributed to this effect.

Mr Bromfield recommends us to pare off the cartilage of the joint with a knife, because the time required to complete the exfoliation (which, he believed, must always happen) makes the cure

cure very tedious. To this, Mr Alanfon objects; properly observing, that the cartilage will throw out granulations, and unite with the soft parts; and that, in those cases where exfoliation did take place, it was solely the effect of the dry lint which was applied. In the present instance, the slow union of the cartilage and soft parts made the cure tedious. A sinus was formed, and a quantity of a glairy synovial fluid discharged. I cannot see that any damage would be incurred by removing both the socket and point of the acromion: Our labours would be abridged, and the face of the stump would be both rounder and more even, by following this practice.

My patient was so exhausted by loss of blood before the operation, that I was anxious to secure the vessel as quickly as possible: I therefore passed an armed crooked needle, and included in the ligature both artery, vein, and nerves, along with soft parts. No bad symptom followed; nor did I ever witness any distress from including the end of a nerve in a ligature. I by no means assert that it is not of importance to exclude the nerve; bad symptoms may follow, and therefore it should be excluded, when it can be readily separated from the neighbouring parts. But it sometimes happens, in urgent cases, that the nerve cannot be easily discovered, and we should lose our patient from hemorrhage in the attempt.

Where the blood-vessel to be tied is large, and arises near the heart, I do not think it safe to trust to the tenaculum and ligature. The impetus with which the blood is sent forward may force off the ligature from the end of the artery; an accident which I have twice witnessed. It is safer to use the crooked needle, or to follow the plan lately recommended, of tying the artery, and then passing the end of the ligature, by means of a needle, through the vessel between the extremity of it and the tied part, and then securing the two ends with a knot. This practice is said to be superfluous by a late writer*; but I am convinced of the fact, that the ligature is sometimes beat off, which must greatly endanger the life of the patient.

I cannot speak to the effect which pressure, well applied and steadily preserved, would have in stopping the bleeding from the brachial artery, because, in the present instance, the parts were too much swelled to admit of it. Mr John Bell says, that pressure applied *above* the clavicle would not have any effect; a direction which Mr B. Bell has inadvertently given. But if, as Mr J. B. admits, the bleeding *may be considerably restrained* (though not quite suppressed) by pressure applied on the artery *below* the clavicle, just after it has emerged from the arch, and passes over the first rib, it is no trifling advantage in this operation, and should not be neglected.

Preston, Feb. 25. 1805.

* Med. and Phys. Journal, No. 72. p. 101.

IV.

History of a Case of Trismus, in which the Affusion of cold Water was successfully employed. By WILLIAM DALRYMPLE, Surgeon, Norwich.

ON the evening of the 14th of September 1803, Miss E. E. 22 years of age, with dark brown eyes and hair, of a delicate and very irritable fibre, being then in perfect health, was seized, whilst drinking tea with a party of friends, with a total inability to swallow, accompanied by a sense of soreness and rigidity among the muscles of the hinder part of the neck. In a few moments these sensations subsided, and were followed by a very painful contraction of the levator muscles of the lower jaw, which, for a few minutes, become violently and immoveably locked.

Alarmed by these symptoms, and by the recollection of a recent and severe illness, she made preparations for returning to her house; but, before she was ready to begin her little journey, the spasm completely abated, and her friends importuning her to continue among them, she yielded to their wishes, and passed the remainder of the evening in perfect ease. In the course, however, of the following morning, she was visited by three or four slight attacks of a similar kind, which, towards the evening, gradually increased in frequency and force, and at length terminated in a firm and permanent contraction of the lower jaw. In this state, accompanied by her mother, she came to Norwich for my advice.

From an intimate acquaintance with the extraordinary irritability of my patient's system, and having in recollection a train of very curious, and somewhat analagous phenomena, which, in the course of a former illness, arose from the irritation of worms, I was at first inclined to attribute the present symptoms to the same cause, and to consider the present complaint as a modification of that species of spasm which SAUVAGES has denominated *Trismus Verminosus*. Upon inquiry, however, I discovered that, about three weeks previously to the commencement of this attack, my patient had accidentally trodden upon a thorn, which penetrated her shoe, and entered the sole of her left foot, near where the first phalanx of the great toe is articulated with its metatarsal bone. The wound was indeed so slight and superficial, that, having removed the thorn, she proceeded without inconvenience in her walk, and did not immediately recollect the accident, when I asked her concerning it.

Upon

Upon examining the foot, a minute speck of hardened blood, not larger than a small pin's head, was still perceptible in the skin where the thorn had entered; but not the faintest vestige of inflammation now existed, nor did pressure upon the part, *at this time*, occasion the slightest pain or agitation.

At this moment, the spasmodic affection, which constitutes that important disease called *trismus* or *tetanus*, appeared in its simplest form. The patient's respiration was free and easy; her pulse calm and natural. She was void of pain, and her mind in a state of perfect composure. She complained, indeed, that, in the course of the preceding night, her rest had been disturbed by frequent and painful twitchings in the muscles of the neck and arms, which had left those parts, especially the former, rather tender to the touch, and more than ordinarily susceptible of impressions of cold. These tremulous motions, however, were no longer perceptible, and, exclusively of the spasm upon the jaws, which had now been closely locked nearly 18 hours, her feelings and appearance were those of moderate health.

Denied access to the stomach by the firmness of the spasm and the perfect regularity of my patient's teeth, I was under the necessity of confining myself to the use of external remedies. A blistering plaister, extending all over that part of the temporal muscle which is not covered with hair, and reaching downwards to the lowermost termination of the masseter muscle, was accordingly applied to each side of the face, and another, very ample in its size, was adapted to the nape of the neck. An ointment also, composed of one ounce of the stronger mercurial ointment, and two drachms of finely powdered opium, was prepared, and an eighth part of it directed to be most diligently rubbed into the skin, at the inside of the thigh and upper arm, every two hours.

September 16.—At 12 o'clock this morning, three drachms of opium, with a proportionable quantity of mercurial ointment, had been consumed in the different frictions, which, I am satisfied, have been carefully performed. Not the slightest abatement of the spasm has taken place. The jaws are now so closely locked, that I am not able to introduce the point of a very thin steel spatula between them. The preceding night was passed without sleep, but quietly; no return of the twitchings in the neck or arms have occurred. A small quantity of fluid jelly and of wine has been sucked in between the teeth, but complaint is made of great difficulty in swallowing it, and of frequent and sharp pains darting along the sternum and at the *scrobiculus cordis*.

September 17.—This morning, appearances are still less favourable

vourable than yesterday. The blistering plaister, which was applied to the nape of the neck, appears to have relieved, in a slight degree, the stiffness and soreness complained of in that part; but the spasm upon the jaws remains unaltered. A painful sense of heat is felt in the mouth and throat, and a very small quantity of liquid nourishment has been swallowed with increased difficulty. The night was sleepless and uneasy, rest having been disturbed by twitchings in the neck and arms, and her mind filled and harassed by frightful imaginations. The pain along the sternum is constant and severe; that at the pit of the stomach peculiarly pungent. The frictions have been regularly and diligently made. The effect of the opium upon the system is scarcely to be perceived; but the gums are manifestly affected by the mercury. The bowels have been relieved twice since the beginning of the complaint: the urine is small in quantity, and voided with considerable pain.

At my visit on the 18th, I found most of the symptoms of the preceding day still more strongly marked, and, in addition, Miss E. complained of great uneasiness at the root of the tongue, accompanied by a constant feeling of fulness of the throat, arising to a most distressful sense of suffocation, whenever she attempted to swallow the saliva, which was secreted in unusual abundance. Slight convulsive motions of the muscles of the face, particularly of the frontal muscle, were now perceptible. Her breathing was short and quick; her pulse frequent and fluttering. During the night, which was sleepless, and passed under great agitation of mind, she was much annoyed by hiccup, which increased the severity of the pain at the pit of the stomach. Her thoughts were perturbed and anxious; she sighed deeply and often, and the expression of her countenance, which is naturally mild and cheerful, was grim and gloomy. Although she made no reference whatsoever to the accident in her foot, when pressure was applied this morning to the little speck which I have already mentioned, the muscles of the face and arms were immediately convulsed, and increased pain was felt about the throat and jaws. As soon, however, as the pressure ceased, the muscles of the arms became quiescent, whilst the twitchings of the face continued to recur at frequent and irregular intervals.

In this state of things, a consultation was requested, and Mr Martineau of this city, who was particularly known to my patient's friends by his successful treatment of a similar case in the neighbourhood of their residence, was called in. At our joint visit on the 19th, we found appearances much the same as I have

have just described them. With respect to the treatment which had lately been pursued, I have to state, that, since the morning of the 17th current, the mercurial frictions had been discontinued, in consequence of their effects upon the salivary system; but although simple lard having been substituted for mercurial ointment, the use of opium had been regularly persisted in. No advantage of consequence appeared to have been derived from its application; the violence of the spasm upon the jaws remained undiminished, and the other symptoms of the disease had been gradually unfolded and established. Indeed, with regard to the operation of opium in this case, its effects upon the system were by no means conspicuous, although, within the space of 76 or 78 hours, no less a quantity than 10 drachms had been used. The pains of the pit of the stomach, and along the sternum, were, however, somewhat relieved by the joint use of that medicine and warm spirituous fomentations applied to the parts.

At the suggestion of Mr Martineau, it was determined to propose and make trial of cold affusion. Its effects were beyond our most sanguine expectations. Scarcely was the fourth hand-bason emptied on the head of our patient, when, heaving a deep sigh, and fainting as the water fell around her, the spasm dissolved, and we had the satisfaction of beholding the jaws widely extended.

The shock upon the frame was excessively severe. In none of the instances in which I have had occasion to employ this powerful remedy (they have, it is true, been uniformly cases in which the temperature of the body was preternaturally high) has its influence in diminishing the action of the living powers been comparable to that which it displayed on the present occasion. Respiration was suppressed; the heat of the surface, which, throughout the illness, had been moderate and natural, was extinguished; the pulse at the wrist entirely suspended; and, for a few seconds, a feeble fluttering of the heart seemed rather the harbinger of death than of renewed or reviving health. I confess I was a little alarmed at first: appearances, however, soon began to mend. Warm blankets were in readiness, and a glass of hot wine having been swallowed, the patient was conveyed to bed, and frictions over the whole surface were immediately and diligently employed. In a very few minutes the powers of life revived. Respiration recommenced; the pulse returned to the wrist; the heat was gradually restored; and, after taking a small quantity of nourishment, she fell into a sound sleep, which lasted several hours.

On the following morning (the 20th of September), I found my

my patient in a state certainly of extreme debility ; but, in every other respect, her situation was very satisfactory. The jaws remained free from spasm ; the tremours of the face and arms had ceased ; her mind was calm and serene, and the pains at the præcordia were much abated.

In short, from this time, the progress of the cure was uninterrupted, and Miss E. gradually recovered her usual state of health.

Such is the simple history of this interesting disease. I purposely forbear to add any minute and unnecessary remarks. I would, however, observe, in general, that if I am correct in the judgment which I have formed concerning the nature and origin of this affection (I readily admit that they are not indisputable), another fact is added to our scanty experience on this subject ; and as far as a single observation extends, we may henceforward proceed with increased confidence and success in the treatment of that variety of *trismus* which arises from local injury.

WILLIAM DALRYMPLE,

Norwich, April, 1805.

V.

Remarkable Case of Tympanites. By JOHN CHARLES COLLINS, Surgeon, Swansea, Member of the Royal College of Surgeons of London, and of the Medical Societies of Edinburgh and Guy's Hospital.

JANE DAVIS, aged 17 years, dark hair and complexion, was, about February 1803, seized with a violent pain in her right side, which continued for some days, when a small tumour in the epigastric region, about the size of a large walnut, was observed, which was attributed to her drinking cold water when much heated by dancing. Being arrived at this period of life without ever having had any appearance of the menstrual discharge, her mother gave her different kinds of herb tea without any effect, the swelling increasing in size, and the girl becoming thin by constant pain on pressure, short cough, great thirst, and loss of appetite. In this state I saw her in June following. The tumour was then of the size of a musk melon, projecting immediately from under the elastic ensiform cartilage ; no fluctuation sensible ; great tension, on pressure, recovering its form instantaneously as a distended

distended bladder ; pain less than at first ; pulse quick and feeble ; respiration difficult ; complete loss of appetite ; indeed she had subsisted entirely upon warm beer for nearly five weeks before. The latter end of May there was the first appearance of the menses, but without any visible alteration as to the size of the tumour, or any of the other symptoms. She declares that, to the best of her recollection, she never has been troubled with any unnatural discharge of wind, either upwards or downwards, since the tumour arose ; though she allows that formerly, when attending a bakehouse, she had been frequently disturbed by involuntary discharges downwards, and which she tried all in her power to check : this has, however, now entirely ceased. Eating vegetables, she has observed, always gave her a greater sensation of fulness, and increased the swelling, as well as the difficulty of breathing, with a sensation of weight below the umbilicus, where there is not the least enlargement ; the parts rather partaking of the general emaciation. Her bowels are regular ; she is sensible at times of air moving within the intestines, apparently unconnected with the tumour. She never remembers having been particularly troubled with heartburn, but complains of constant chilliness.

I immediately ordered her a warm purgative, and recommended a tight bandage ; and the following day began to give her the sulphas ferri and assafoetida, combined with the extract of gentian ; and forbid her vegetables and malt liquors. The purgative produced a considerable discharge, but unattended with much wind, or any diminution of the swelling ; and the pills produced little or no effect, excepting nausea. I then changed the sulphas ferri for the carbonas ferri ; and, not finding any effect produced by this, gave strong doses of the tinctura muriatis ferri, with intervening doses of calomel, scammony, gamboge, and aloes, varying them according to circumstances. This treatment was continued for a very considerable length of time, though I must confess my patient was not always regular in taking her medicines. About this time she went to sea in a small boat, which made her extremely sick, and induced much vomiting ; her nose bled, and she was surprised to find, on her return home, her body diminished almost to its natural size ; but in two hours the swelling returned, she thinks, with a greater degree of fulness. I could not discover whether she had discharged much wind during the violence of the sickness, for she was so exhausted as to be obliged to go to bed immediately, and stay there for several days ; during which period there was a slight appearance of the menses, but not in proper quantity ; her pulse was quick and low ; she nauseated every thing. I now thought a few days would terminate the case ; yet, in this state, her friends urged

ged her to try the professional men at Bristol; and as the sea-sickness had certainly once removed the tumour, was there strength sufficient left, she might again receive benefit from it. She set sail, and had her expected sickness, but without any alteration upon the swelling, and, on her arrival, she was again confined to her bed for a few days, after which she waited upon some professional men, who recommended her to the Medical Pneumatic Institution, from which she had received some medicines, but took but little of them, hearing from the people about her, that the medical men gave no hopes of her case. She was alarmed, and came home by sea again with a recurrence of her sickness, but without any benefit, the swelling being much increased in size. She now, with the advice of some friends, took myrrh and steel medicines again, but in much smaller doses than before, and they produced little if any effect. Since that period, which is now six months, she has been for change of air in the country, and although the tumour is most wonderfully enlarged, yet she has acquired strength, appetite, and flesh; her monthly evacuations have been regular these four months; no cough, very little thirst, bowels regular, and, in every respect, she is better than she has been for many years, if we except the swelling, which has now, for nearly these six months, extended into the right and left hypochondriac regions, almost to the vertebræ, large in its origin in the epigastric region, and tapering towards the vertebræ. At its centre, it is about the size of a quart basin or middling-sized shaddock, and at the extremities, of a man's arm above the elbow.

The most extraordinary circumstances attending this case are, I think, the gradual increase of the swelling, the total want of effect in the medicines, the reduction of the tumour on the first sea voyage, and the uniform extension of it around the body. The slow progress of the swelling may be accounted for, perhaps, by supposing that the air was gradually secreted from the minute blood-vessels lining the intestinal canal. This Dr Bailey looks upon as one cause or means of its collection; yet how are we to account for its rapid return, after it had been removed by the first sickness? That there was a discharge of wind during the exertion of vomiting may certainly be presumed, although the only proof we have was the removal of the tumour. Dr Graves, in the medical facts, remarks the gradual increase of the tumour in his case, which he calls *meteorismus ventriculi*, and states it as particularly marking this disorder. The want of effect in the medicines I can scarcely conceive to be owing to the smallness of the doses, which were as follows, from v gr. to xxv of the *sulphas ferri*, x gr. to xxx of the *carbonas ferri*, and

from v drops to xxxv of the tinctura muriatis ferri, every four hours. Perhaps, had some steel and carminative injections been made use of, they might have been of service; but this the patient would not submit to. The extension of the tumour around the body is perhaps one of the most striking features in the case, and from it I am much disposed to look upon it as a collection of air in the arch of the colon secreted by the vessels, as before mentioned. Having no opportunity of examining a large collection of professional books, I have not found any description similar to this in extension, which is further remarkable, that it has become more distinct since her improvement in health. Should this be found a just conclusion respecting the seat of the disorder, we may, I think, with great propriety, call it *meteorismus coli*. Dr Monro, in his case, says, that several unequal protuberant balls were felt every where, but especially at the sides of the abdomen. I never could perceive or feel any in the above case, neither did my patient ever complain of the tumour spreading below the umbilicus. How far Dr Darwins' proposal of introducing an unarmed pipe, and fixing it in the rectum, would be of use, I know not. Sharp, in his Practice of Physic, talks of tapping for this disorder, but he evidently seems to confound it with ascites, and Morgagni gives us several similar cases of the fatal effects of such an operation: he mentions a case where the colon was so distended as to resemble a bladder, and the superior and inferior portions so contracted as to be impervious. There is also a case in the 2d vol. Med. Comm. supposed to have been produced by bark after an intermittent; but the formation of air in the stomach, when bark is given to weak habits, frequently happens, and is easily removed by joining carminatives with it.

However unpleasant it is to relate to the public the result of unsuccessful practice, yet such observations frequently become valuable on future occasions; and I would feel happy, if I thought the relation of this case should ever afford one successful hint to some future practitioner.

VI.

Case of Torpor from Cold, and some general Observations on the Effects of diminished Temperature upon the living System.
By GEORGE KELLIE, M. D. President of the Royal Medical Society, and Fellow of the Royal College of Surgeons, Edinburgh.

ON the evening of the 26th February, I was requested by Mr Charles Cheyne, in the absence of my friend Dr Cheyne, to visit William Dennis, a lad of 16 years, belonging to the Glasgow Packet, who had been found (as was supposed, dead) in a boat at the end of Leith pier.

He had, along with some companions, left the harbour about one o'clock, with the intention of taking a sail in the roads; and on attempting to regain the harbour, between four and five in the evening, the boat grounded on the flats a little to the east of the pier. His companions got ashore, leaving him in charge of the boat, and promising to return to his relief, so soon as they had refreshed themselves.

Two seamen, who were walking the pier some time after, observed him stretched out in the stern of the boat, as they imagined, asleep; but, becoming alarmed, they went to his assistance about half past seven. He was found cold and insensible, and immediately transported to a neighbouring house, where we soon after saw him. When we arrived, he was stretched out, before the fire, on his back, with very little appearance of life; the whole body, with the exception of the face, which was well coloured, was of a deadly pale appearance, and very cold. The powers of sensation, and of muscular motion, were completely suspended. The head and limbs, perfectly flexible, fell lifeless to the ground, from whatever position they were raised to; the mouth was half open, and the jaw, obedient only to the hand, could be moved upwards and downwards, but returned to the half-closed position; the respiration was obscure and insensible; but the pulse was quite distinct even at the wrist, though irregular and slow. The organs of sense were equally inexcitable; a candle held close to the exposed eyes made no impression, the eye-balls remained fixed and motionless; the pupils, though dilated, contracted irregularly, while yet exposed to the light, in the way I have sometimes observed them to do in the recently dead.

From every thing I could learn from the attendants, as well
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as from the natural and inoffensive smell of the patient's mouth, I was satisfied that intoxication was here out of the question. The most careful examination did not discover the smallest appearance of external injury; I concluded, therefore, that the symptoms had arisen from the operation of cold. To this cause he had been many hours exposed; the influence of the diminished temperature of the atmosphere had also been assisted by moisture; it rained; and the subject himself had previously suffered from fatigue and inanition; he had eaten nothing since the morning.

To excite the organs of respiration to the due performance of their almost suppressed functions, to assist the circulation, and to restore the heat carried off from the surface, were the obvious indications. With these last intentions were employed all the usual means of communicating heat, and diligent frictions, with warm flannels.

Mean while the assistants, little satisfied with the slow effects of these means, were clamorous for the usual practice, on such occasions, of opening a vein, to see if the patient would bleed, which was accordingly practised; about four ounces of blood trickled down the arm. A phial of aqua ammoniacæ, which I had ordered, being now brought in, I directed my principal attention to the excitement of the muscles of respiration, and it was with infinite satisfaction I perceived, on the very first trial, that I had these so much under my command. The first applications of the ammonia to the nose occasioned some retraction of the muscles of the face, but did not produce any deeper breathing, or more perfect inspiration. On pouring a little of it, however, on the breast and epigastric region, and rubbing it forcibly in with my hand, I soon had the pleasure of observing the belly swell up from the violent and prolonged action of the diaphragm, and this succeeded by a proportionally full expiration. This was repeated at short intervals with the same success, the assistants being meanwhile unremittingly employed in chaffing the body and limbs with warm flannels. Shortly the ammoniacal frictions of the epigastric region not only excited the usual full inspirations, but a writhing motion of the neck and shoulders, which could now also be reproduced by the vapour of ammonia applied to the nose. Now, too, the pulse began to rise, to become more regular, and more frequent; and, in about an hour after my first endeavours, the jaw was observed to be more closed, to resist a little the attempts made to open the mouth, and to return when the force was withdrawn. There was reason to expect he might now be able to swallow; the trial was made, but this power was found as yet too imperfect. At
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length, however, after several attempts, a few tea-spoonfuls of warm brandy and water were got down; and, by previously irritating the lips and tongue, this was repeatedly, and at short intervals, effected. This gave great satisfaction to the attendants, and encouraged them to persevere in the measures I was enforcing. About two hours from the time I was first called in, the life of my patient seemed secure; the respiration was no longer obscure, the pulse was regular, full, and fluent, beating 100 in the minute; the heat of the face and chest had risen, though the extremities were still very cold. Warm bricks were applied to the feet, the body was covered with blankets, and the frictions of the limbs were continued. It was not till half past eleven, that is, after three hours unremitting labour, that the natural temperature could be said to be generally restored. At midnight, when I left him, it was uniformly diffused over the body; the respiration was easy and natural; the pulse full, and rather bounding; but the *coma* continued as profound as ever. In this state he remained till three in the morning, when he awoke as if from the most natural sleep, spoke to his father, complained only of thirst, drank a basin of tea, and again slept for a few hours.

I saw him at nine; he had just finished his usual breakfast, which he had taken with his customary appetite; complained of nothing but a little thirst, and the excoriations produced by the ammonia; the tongue was clean; the pulse 90, and soft.

He remembered, that, when left by his companions in the boat, he felt cold, fatigued, and sleepy; but, of all that had afterwards passed, he had not the smallest recollection,

Our knowledge of the nature of caloric, though still imperfect, has of late been greatly extended by the discovery of some of the general laws which regulate its distribution, its affinities, combinations, and evolution. By these deductions, and by direct experiments, the phenomena of respiration, and the sources and distribution of animal temperature, are better understood, while extensive and accumulating observations on the influence of greater and less degrees of heat, and the alternations of these, upon the energies of organized beings, vegetable as well as animal, in every stage of existence, as in hybernation, germination, incubation, torpor, and excitement, enable us to reason and to speak with more precision than formerly of the effects of temperature on the living system.

Of the general exciting or stimulant power of heat, there can
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be no doubt. And with regard to cold, the disputes concerning its operation have been perpetuated by logical illusion only. In common language, we are accustomed to speak actively of cold as of a positive and active energy, while philosophy can acknowledge it only as the expression of a relative decrease of temperature ; for any degree of temperature designated by the appellation cold is still heat.

A certain range of temperature is adapted to the due performance of the functions of organized beings. This range, however, is not the same for all. It varies with the capacities of different orders of beings, and even of the same orders under different circumstances. Thus many vegetables and animals annually perish or become torpid from a diminution of temperature, which is yet sufficient for the life and activity of a great many others : or one power of heat, which stimulates the energies of one class of beings, is insufficient for another, with regard to which it is altogether negative. And this, whether we call the particular temperature heat or cold, is all that can be understood by the appropriated terms, stimulant and sedative. The same temperature is, in this sense, at once stimulant and sedative ; stimulant with regard to one order of beings whose energies are more excitable ; sedative with regard to another whose excitability is less. Stimulant or sedative, however, are not properties of caloric. We cannot therefore say that any range of temperature is uniformly stimulant or sedative, but we know that the effects of the same temperature will be positive or negative, according to the powers and capacities of the organized beings upon which it acts. This capacity of stimulation by caloric varies in different species, in the different individuals of the same species, and even in the same individual at different times. Many vegetables and some animals perish, languish, and become torpid, in the autumn, under temperatures by which, in the spring, they were excited to activity and life.

Within the limits of each appropriate range of temperature, the life and active vigour of the being is maintained. As the temperature descends, it stimulates less and less, till it reaches at length a point, at which it ceases altogether to have any effect. On the other hand, the temperature, carried too high for the powers of the system, debilitates the individual, and destroys action, which may be again restored, by reducing the temperature ; and thus the abstraction of caloric invigorates and produces excitement. In this way, the stimulant power of heat, the sedative operation of cold, and what has been called its tonic power, are true in fact, and mutually reconcilable. The energies of organized beings are not constant, but

fluent quantities; the kind and degree of effect, therefore, which results from the operation of an external agent, will be as those energies, and the powers of the agent conjointly, both of which are variable. To apply these general observations to the influence of cold, or diminished temperature, on the human system, we remark, that, by these alone, the great variety of changes produced can be reconciled or explained. A certain decrease of temperature, which invigorates some, to which many acknowledge an increase of spirits, health, and activity, depresses the forces of others, and induces lassitude, rigor, dyspepsia, headach, catarrh; from greater changes arise rheumatism, pneumonia, the other phlegmasiæ, and fever itself, according to the various predisposition of individuals. In all, the general application of great or long-continued cold produces languor, lassitude, faintness, debility of the voluntary powers, drowsiness, torpor, and death. The case now detailed affords us an example of these effects carried the length of very complete torpor, from which, however, the patient was happily recovered. The temperature to which the individual had been exposed was not, indeed, depressed to a degree generally incompatible with activity and life: but our patient was reduced by fatigue and fasting; the effects of the atmospheric cold were increased by the drizzling rain which fell; he lay inactive in the boat, and yielded without resistance to the first propensity to sleep.

This state of torpor, induced by decreased temperature, involves much interesting inquiry. It is a change to which some animals are annually exposed at the approach of winter; a salutary one, it would seem, which suspends, during a season of scanty subsistence, the active functions without destroying life, and preserves to them the power of resuscitation with the return of vernal heat and plenty.

In passing into this state, the irritability of the sanguiferous system seems first affected; the pulsations of the heart and arteries are languid and less frequent; the respiration, next affected, is performed more slowly; the internal heat falls below the natural standard; the functions of digestion are suspended; the powers of voluntary motion and of sensation gradually sink, and at length the torpor becomes complete. In some, as in the amphibizæ and insects, every faculty indicative of life is suspended; even the functions of respiration and circulation are arrested: In others, a languid circulation and respiration is for the most part preserved.

In tracing the progress of resuscitation, we remark that the functions are revived nearly in the order in which they became torpid;

torpid; the circulation and respiration first, and, gradually after, the activity of muscular motion, is restored.

The progress also of torpor from cold, in man and other animals not subject to this annual sleep, is similar to that we have described as taking place in hibernating animals. But the capability of resuscitation is sooner lost; the torpor terminates rapidly in death, though there are not wanting examples of recovery, after long-continued torpor, even in men.

When an animal has been some time torpid, its temperature is throughout greatly diminished, although, even in extreme cases, this is somewhat above that of the atmosphere. But, at the commencement and earlier period of torpor, there is reason to believe that the heat of the internal parts is little, if at all, diminished. I regret that, in the case now before us, I had not an opportunity of ascertaining more accurately, by thermometric observation, the internal heat; but, in so far as I could judge, while the surface was of the most deadly cold, the blood which flowed from the arm had preserved its natural temperature. The bodies of animals are very imperfect conductors of caloric: we know there may be a great reduction of temperature of the surface, while that of the internal parts remains unchanged. Even a dead body loses its heat very slowly, and not till after a much greater lapse of time than is sufficient to induce torpor in the living system by the application of cold to its surface. And the instant reduction of the pulse, in such cases, is perfectly incompatible with the notion of any change of temperature having been effected, either in the blood, or in the propelling organs. So, when a person becomes torpid from cold, we cannot suppose that the cause has operated directly on every part affected. The torpor, indeed, of the skin and extreme vessels is the immediate consequence of reduced temperature; but the action of the heart and arteries is diminished, the vigour of the internal organs is impaired, the voluntary and sensitive powers become torpid in regular succession, without the immediate impression of the first cause, and while the temperature of those parts is little or not at all changed. Nay, in the case here related, the torpor of the voluntary powers continued some time after the natural temperature of the body was completely restored*.

* This, perhaps, is not singular. It seems to have been the case, even in a greater degree, in other examples; as in the glass-eater, treated by Borelli. *Lethargus a frigore*. Petr. Borelli *Centur. 1 Observ. 52 A.*

“*Amardus Coquus Castrensis qui erat vitrivorax, seu impune vitrum vorabat, frigora nivis in itinere perpeffus, incidit in lethargum.*
Per

The theories of sympathy and of associated motions are hardly adequate to an explanation of the phenomena of torpor from cold. There must here, as in other cases, be a regular series of events, a succession of antecedents and consequents in the relation of cause and effect, from the first to the last event, which it is the business of philosophy to discover and enumerate. The narration is still incomplete, from defective facts and limited observation. Some links of the chain, however, are perhaps within our reach. The terminations of the sanguiferous system on the surface of the body have their action immediately diminished by the local abstraction of caloric; the heart and arteries form one connected system, constantly acting together, so necessarily dependent on each other, that whatever increases or lessens the vigour of one part must increase or lessen the activity of the whole; though the temperature of the heart itself be no way affected, its irritability is instantly diminished by the abstraction of caloric from the extreme branches of the system. This is a constant event, an unbroken connexion of antecedent and consequent. Physically speaking, therefore, there is no room for farther inquiry here. But what is the order of succession between this and the complete torpor of the voluntary muscles, and of the organs of sense? and how are the intervening events connected?

The powers of voluntary motion and of sensation are known to depend immediately upon the conditions of the brain and nerves; if, therefore, we could discover in what manner these organs are affected by any of the preceding events, we should advance considerably the solution of the questions above stated. Were the inactivity of these organs the direct effect of their diminished temperature; did the torpor, in no case, take place till the heat of the brain and nerves was reduced beneath the natural standard, there could hardly be ground for any farther inquiry. But, as it is not so, some other change less direct must have occurred, in consequence of the connexion of the brain with, and its dependence upon some other of the functions antecedently and more immediately affected; and this function I apprehend to be respiration, between which, and the energies of the nervous system

Per plures dies instar mortui et cum metu suffocationis non mediocri fuit. Borellus adhibuit vesicantia, cucurbitulas scarificatas, sternutatoria et tandem castorei scrupulos duos, et scammonii scrup. cum oxymellite pro duabus dosibus, et sic sanatus fuit.—*Saurvag. Nefol.*

Hybernating animals do not at once recover the complete use of their limbs; their motions are at first languid, slow, and weak: and it is probable that, before they are enabled thus with difficulty to creep from their retirement, the circulation and respiration had for some time been restored.

system a very intimate connexion is maintained, through the changes produced on the blood during the pulmonary circulation. This dependence of the brain upon the properties of the blood, maintained by respiration, is evinced by a great variety of observations. Whatever impedes the respiratory changes of the circulating fluid debilitates or destroys the powers of muscular motion, as the respiration of noxious gases, of reduced or rarified atmospheres; while greater exertions of muscular power call for and give occasion to more frequent respiration, more rapid consumption of air, and greater changes of the blood; and the breathing of more effective gases, as of the nitrous oxyde, increases the motive and sensitive powers of animals. That these effects depend immediately upon the properties of the blood, as modified by respiration, acting on the brain, has, I think, been proved by the experiments of Bichât, who, in a masterly manner, has traced the mutual connexion and dependences of the vital functions, in his admirable *Recherches Physiologiques sur la vie, et sur la mort*. The transfusion or injection of venous blood into the carotids induced asphyxia or death, the instant it reached the brain; an effect which did not follow the similar transfusion of arterial blood: on the contrary, the dog subjected to experiment was recovered from asphyxia by the transfusion of red arterial blood from the carotid of another. By these experiments, and by various other observations, he has shown, that the asphyxia which so instantly follows impeded or suspended respiration is occasioned by the impression of dark, venous, unchanged blood upon the brain, and not, as has commonly been supposed, from this blood being incapable of stimulating the left side of the heart, which, on the contrary, continues to contract and to circulate the blood for some time after the voluntary functions are suspended; an observation confirmed also by Coleman and others*.

Such, then, appears to be the connexion between the functions of respiration and those of the brain. Now, in animals rendered torpid from cold, there are many observations which lead us to believe that the immobility of the nervous system depends much, and very directly too, on the state of respiration.

In the perfect torpor of the hybernating amphibiz, respiration is completely suspended, and the consequent changes produced

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* It is well known how easily insects are destroyed, or rendered torpid, by closing their stigmata with oil. In caterpillars we can, in this way, experiment very instructively. Close the whole of the stigmata, and you kill the animal; the stigmata of one side only, you induce hemiplegia; one half the stigmata of both sides, paraplegia. The connexion between respiration and the motive organs is thus beautifully exemplified.

on the blood by that function, totally prevented. This, which appeared from a variety of observations on the winter-quarters of such animals found imbedded in mud, or incased in ice, or closed up by opercula of their own construction, for the occasion of excluding the air, has been amply confirmed by the pointed experiments of Spillanzani, lately published by Sennebier.

In every case of torpor from cold, where the respiration falls short of this complete suspension, it is at least more or less impaired. How much the torpid state depends on this condition of the respiratory functions farther appears from observing, that hybernating animals, even those not of the amphibious order, warned by the approach of winter, instinctively or industriously seek situations unfavourable to perfect respiration, where this function may be either inadequately or not at all performed, as by premature and voluntary interment under ground, in old walls, in mud, at the bottom of lakes, &c. The instinct of these animals too has been finely imitated by experiment, illustrating at once the object of this instinct, and confirming the opinion here advanced of its tendency. Thus the dormant hamster was found to regain and preserve its activity, when freely exposed to a pure atmosphere, the temperature, at the same time, not exceeding that at which it had formerly become torpid, or at which it returned to that state when again occluded under ground*. These observations seem conclusive on this point, and, with those already brought forward confirming the general connexion established between the properties of the blood as modified by respiration, and the functions of the brain, render it, I think, highly probable, that the torpor of the voluntary powers, in the cases now under consideration, is the consequence of a limited and imperfect respiration, antecedently induced by diminished temperature.

Observation, indeed, is more deficient on this point with regard to the higher orders of animals, and to men who only occasionally become torpid from cold. Yet more than analogy, which is here very strong, leads me to believe that, even in these, the functions of respiration are much and necessarily affected. The examples of cattle and of men remaining long torpid, deeply buried under snow, are pretty direct and convincing proofs of this. In the case above related, had this reasoning been at the time familiar and present to my mind, I might have made some more decisive observations, or experimentally examined the products of respiration. I remarked, however, without any allusion to,

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* Buffon's Natural History.—*Hamster*.

or bias from the particular opinions now entertained, in noting the case, that the respiration was obscure and insensible, though the pulse was distinctly perceptible, even at the wrist. I have had neither time nor opportunity to consult the authority of other cases on this head; but from the terms asphyxia, sleep, torpor, resemblance to death, usually employed by writers, as well as by the vulgar, to denote the state induced by extreme cold; and in the familiar narration of such cases, I conclude that the respiration is not hurried and rapid as in apoplexy, but obscure and insensible, as above described.

If our induction from all these observations be admitted, we have the rudiments of a theory adequate to the explanation of the phenomena, in so far, at least, as the torpor of the voluntary powers is concerned.

From the suspended or imperfect respiration, those changes, by which the blood is fitted for maintaining the activity of the sensorial system, are interrupted; this imperfect blood circulating slowly through the brain directly impedes its functions, and so debilitates the excitability of the motive and sensitive organs, that they become torpid. This enunciation may seem hypothetical; but let the proofs of the intimate connexion between the respiratory and sensorial functions be weighed; consider also the interrupted respiration of hybernating and torpid animals, their instincts with regard to this, and the greater facility with which torpor is induced in a confined situation, which they naturally seek; and compare all these with the observations and experiments of Bichât on the effects of the immediate impression of venous blood upon the brain, and you will perceive a connected system, not entirely fanciful, a theory not without foundation and strength, and which appears, to me at least, to merit some attention. "A theory," it is well observed by an elegant writer and accomplished philosopher, "a theory founded on experiment, and not assumed, is always good for so much as it explains. Our inability to push it indefinitely is no argument at all against it. This inability may be owing to our ignorance of some necessary mediums, to a want of proper application, to many other causes besides a defect in the principles we employ*."

It cannot therefore be fairly objected to the theory, that it removes the difficulties but one step, and leaves the impeded respiration itself unaccounted for. It is good in so far as certain events in the series are connected and explained. But we may
 4 farther

* Burke's Inquiry into the Origin of our Ideas of the Sublime and Beautiful.

farther observe, that the changes which the blood undergoes during the pulmonary circulation depend greatly upon the actions of the extreme ramifications of the pulmonary vessels, whose energy may be directly debilitated, and functions impaired, by the immediate abstraction of caloric, as they are simultaneously exposed to the same cold which acts upon the surface, or indirectly by association with the capillaries of the skin previously become torpid*.

These opinions will be confirmed, and the whole series of changes, from the first torpor of the skin and lungs to the complete suspension of the voluntary powers, be connected and illustrated by the theory, if, as there is now some reason to conjecture, the blood suffer changes at the cutaneous surface similar to those it undergoes in the lungs,—if there be a co-operation of the functions of these two organs in freeing the blood from carbonate, hydrocarbonate, or carbonic acid †.

With regard to the method of treatment to be adopted in cases of torpor from cold, I have but very few observations to offer. The principal indications to be kept in view, are to communicate heat, and to excite the respiration and circulation. And the general means of accomplishing those are sufficiently obvious. I do not think the same caution and reserve necessary in the application of heat to a case of general torpor, as to benumbed and frost-bitten limbs. In the latter occurrence, heat must be very gradually communicated; but we would not surely commence the treatment of a case of general torpor, nearly approaching to death, by applying snow to the body. There does not indeed appear to be the same danger of violent reaction, or of destroying, by premature stimulation, an accumulated excitability in general torpor, where the sensorial functions have been all along suspended, as in a partial affection, where, notwithstanding the injury done to a part, the general powers of the system have remained excitable.

The patient may be safely brought into a warm room, provided it be, at the same time, well ventilated. He should be immediately chafed with warm flannels; nor need we fear placing his feet and legs in tepid or warm water.

The difficulty, however, of restoring the heat, is much greater than

* “Hence the capillaries of the skin first cease to act, and become pale and empty; next, those which are immediately associated with them, as the extremities of the pulmonary artery, as happens on going into the cold bath.” *Zoonomia*, vol. ii. p. 405.

† Essay on the Functions of the Skin. *Edin. Med. Jour.* NO. 2.

than might at first be supposed. The difficulty struck me very particularly in the case I have here related ; notwithstanding the means employed, the temperature was very slowly restored, the surface and limbs long felt as cold as ever, when the heating media were occasionally withdrawn ; and indeed the progress in this respect rather kept pace with, and seemed to be regulated more by the excitement of the respiration and circulation, than determined by the caloric communicated from without. Dr Currie recommends that the heat be applied to the epigastric region, by means, I think, of a bladder filled with warm water, which appeared to him more effectual in reviving the patients than any other. We cannot suppose that heat is more readily communicated to the system from this point of the body than from others ; but, applied to the epigastrium, it may act more directly as a stimulus to the diaphragm and heart. Indeed, to excite the action of these organs, I believe to be the object to which our attention and exertions should be chiefly directed. For this purpose, when the body has been removed into a moderately warmed and well-aired room, while assistants are diligently employed in rubbing the trunk and extremities with warm flannels, the application of ammonia to the nostrils, and to the epigastric region, will be found very effectual. Its good effects, in this way, were very memorable and striking in our patient. As soon as the patient has so far recovered as to be able to swallow, it will doubtless be proper to give, from time to time, and by spoonfuls, some warm and gently stimulating drink. As to blood-letting, I regard the practice as useless, while the body is cold, and the circulation and respiration languid. If, however, after these functions and the natural temperature are restored, the patient should remain longer than ours did in a comatose state, with a bounding pulse and high respiration, the propriety and necessity of venæsection can hardly be doubted.

VII.

Leith, 20th May, 1805.

VII.

An Account of the Morbid Appearances observed in two Cases of Diabetes Mellitus. By DANIEL RUTHERFORD, M. D. Professor of Botany in the University of Edinburgh.

CASE 1.

Dissection of John Robinson.

UPON opening the body, a much greater quantity of fat was found both under the skin, and in the cavities of the abdomen and thorax, than might have been expected from the apparent emaciation of the body; indeed, the skin was uncommonly thin.

In the abdomen the blood-vessels all seemed unusually large, and very much distended with blood. The omentum contained a considerable quantity of fat, around large veins filled with black blood. The stomach and small intestines were of natural size and appearance, except that, on the coats of the intestines, the vessels were all very large, and distended with blood, even at their minutest ramifications, giving them exactly the appearance as if they had been well filled with a red injection. The coats of the smaller intestines seemed thicker, and more pulpy than usual. The colon was very large, and distended with air to the utmost; it formed a large doubling under the liver; throughout its whole length, contained very many little balls of hardened faeces. The mesentery was considerably loaded with fat. The vessels were proportionally large and distended as those of the omentum. The lymphatic glands were uncommonly large, soft, and red; their surface too was painted with many red vessels, or with vessels filled with red blood.

The liver, perhaps rather small, was otherwise in every respect in the most natural state, except that it lay far up under the edge of the ribs, pressed thither perhaps by the distended colon. The gall bladder rather large and flaccid, yet containing a considerable quantity of very deep yellow bile. The pancreas was perfectly sound and natural, and also the spleen, though perhaps rather large. The kidneys were much augmented in size, soft, with their surfaces painted with numerous vessels. The vessels were uncommonly dilated. The emulgent vein, *e. g.* of the right side, was not under $\frac{1}{2}$ of an inch in diameter, as it appeared distended with blood. The ureters also were considerably dilated, the bladder

bladder seemed capacious, its coats thickened; and it was half led with liquid.

In the thorax there was a considerable quantity of fat in the mediastinum, and in the lower part especially, running along the diaphragm. The lungs were apparently perfectly sound; a few adhesions were observed betwixt them and the sides of the thorax, and also betwixt them and the pericardium. The lungs in texture were perfectly right, or even perhaps more spongy and pervious to air than common. The heart of moderate size, flaccid, and pale, though the coronary veins were greatly distended with black blood. The large cavities contained a considerable quantity of very dark blood, generally fluid, though some had coagulated slightly both in the right auricle and ventricle. In the anterior mediastinum, in the site of the thymus, was a cluster of glands altogether like those of the mesentery, in several of which were calculous concretions, one not much smaller than a small horse bean. The proper glands of the lungs, those situated at the ramifications of the trachea, were unusually large, soft, and of a brilliant black colour.

The age of this man was between 40 and 50.

CASE II.

Dissection of Ann Laidlaw, aged 9 or 10.

ON external examination, every part of the body seemed to be much emaciated and reduced in bulk, except the abdomen, which was uncommonly distended with what was afterwards found to be air in the stomach and smaller intestines, and faeces collected in the larger ones.

When the muscles covering the abdomen and thorax were thrown back, they seemed to be very slender, and of a rather more florid red colour than they usually are in the healthy subject. The fat was entirely abolished, nothing being left but the cells in which it was formerly contained. The lungs on both sides adhered slightly in some places to the pleura costales; but, on the right side, besides adhering every where very firmly to the pleura of the mediastinum, a quantity of coagulable lymph, of a yellowish colour, was found effused between the pleura of the inferior and middle lobes of the lungs and the mediastinum. On both sides, the lungs were rather of a pale colour externally, but they felt firmer to the touch than in the healthy state; and, on cutting into the substance of them, a puriform fluid was seen exuding from different places, although no distinct tubercles could

could be perceived, and there was little more than the common quantity of serum effused into either cavity of the thorax.

The pericardium contained about four ounces of a yellowish transparent serum. The heart was of the natural size, unusually free from fat, and rather of a pale colour. The right ventricle very flaccid, the left firm and contracted. The internal structure of the heart was natural; but, on opening the aorta, the inner substance of the anterior side of it was of a red colour, and the redness extended from the commencement of the aorta to that part where it passes through the diaphragm into the abdomen. The aorta below the diaphragm was, in every respect, in a healthy state.

The pulmonary veins and vena cava did not appear to be any way diseased; several of the bronchial glands were considerably enlarged; in particular, one on the right side, which resembled a middling-sized walnut, and contained a good deal of a brownish substance, of a consistence rather thinner than cheese. The trachea was perfectly natural.

The stomach was much distended with air, but, in other respects, had a healthy appearance, both externally, and when it was laid open to examine the internal coat. The upper part of the intestinal canal was uncommonly distended with air, and, in some places, the blood-vessels near the juncture of the mesentery were filled with blood, giving somewhat of the appearance of inflammation. The caput cœcum, the colon, and rectum, were every where filled with hard feces, by which they were distended to a size far greater than could have been thought possible in so young a subject: in other respects they were healthy. The glands of the mesentery and mesocolon were enlarged; but, though very numerous, none of them had attained a size larger than a common bean somewhat flattened, and some of them nearly white. The omentum was small, contracted, and completely free from fat. The kidneys were somewhat enlarged, their colour natural; but, on cutting into them, the *tubuli uriniferi* were fully more distinct than usual, and the pelvis of each was also considerably enlarged: no other morbid change of structure was perceived. The ureters were much larger than common, in some places being nearly half an inch, in other places more, in diameter. The right lobe of the liver adhered firmly to the diaphragm in many places; but, in other respects, both as to external appearance and internal structure, it was quite sound.

The gall bladder contained a small quantity of light-coloured yellowish bile. The bladder was nearly empty, but of a natural appearance. The spleen, pancreas, uterus, fallopian tubes, and ovaria, did not seem to be any way diseased.

VIII.

Case of Protrusion of the Tongue. By W. R. CLANNY, M. D.
Bishop-Wearmouth.

ON Thursday, May 24. 1804, Ralph Heighington, five years old, was admitted into the Sunderland Dispensary. He had been much distressed with worms, and for this complaint he was put under my charge. He had every appearance of scrofula, such as ophthalmia tarfi, and marks under the chin from scrofulous sores, &c.; but what chiefly attracted my attention was his tongue, which was so much enlarged in length, breadth, and thickness, that it hung out of his mouth considerably below the chin. It had a very disgusting appearance. The upper part of it was rugose, and indented with a few longitudinal fissures. The dentes incisores were gone; and the few remaining molares were much diseased, and ready to drop out. He could not utter a single syllable, but appeared to understand every thing I said to him. The tongue began to swell before he was a year old; and increased so rapidly, as to prevent him from learning to speak a single word. By the use of a few vermifuge medicines, a large quantity of worms were expelled, and, with them, all the concomitant symptoms disappeared. The tongue remained still much the same, being protruded without the mouth about three inches. The more he endeavoured to pull it within his lips, the further it appeared to be protruded. I thought it expedient to try the mode which M. Lassus recommends, and which is detailed at length in the Medical and Physical Journal, vol. vi. p. 353. With much difficulty the apothecary of the Dispensary pushed back the tongue, and shut the mouth; but the moment he withdrew his hand, it burst without the mouth the same as before. I ordered the tongue to be returned into the mouth, and retained there by means of a silk handkerchief, which was passed below the chin, and the ends firmly fastened at the crown of the head. By this means the jaws were kept perfectly close together. At first he appeared very uneasy, but being relieved occasionally, by taking off the handkerchief for a few minutes, and replacing it again, he was enabled to bear it; and, in the course of five weeks, the tongue became of the natural size and appearance, and he could pronounce several short words very distinctly. By these means, a perfect cure was effected.

IX.

Flatulent Colick, with Hernia, cured by Opiates alone, freely administered. By JAMES ROSS, M. D. Montrose.

A GENTLEMAN, aged 60 years, of a healthy constitution, has been afflicted with a hernia on the right side upwards of 15 years. By wearing a good truss constantly, he has hitherto prevented the descent of the intestine into the scrotum, except once, about half a year ago. He is naturally of a costive habit, and subject to flatulent colick, when this distemper attacks him. It occasions a considerable distension of the abdomen, and obliges him to lay aside the elastic bandage. A tumour is immediately formed, about the size of a small hen's egg, by the protrusion of the intestine, and part of the omentum, through the ring of the abdominal muscles. A most acute pungent pain is felt in the tumour, which pain extends itself over the whole abdomen; the legs and feet become very cold; the pulse, naturally slow, rises to about 90 in the minute. He feels, however, no thirst, nor any sickness at stomach. Warm flannel applied to the feet and legs give some relief.

Formerly I was very anxious to procure him some alvine evacuation, either by means of clysters or purgatives thrown into the stomach, being afraid to give opium freely until he had had a stool. By this mode of treatment he was kept in great torment during 12 or 14 hours. Once or twice the costiveness resisted all medicines, and the distemper ceased, without any alvine discharge; a circumstance which I carefully noticed, and which led me to adopt a different plan. At the next attack of his disease, without regard to the costiveness, I gave him the following draught: *R. Tinct. Opii Gutt. lx in Aq. Cinnam. Unc. i.* This medicine was thrice repeated, with the interval of an hour betwixt each dose; after the third he fell asleep, the hard tumour disappeared, and he awoke next morning in perfect health. He has been relieved in this manner above 30 times, and suffers now very little from his distemper, which was formerly very dreadful to him.

I generally give an aloetic pill, or some laxative medicine, along with the first dose of the laudanum, to prevent the costiveness which it always occasions. This case naturally suggests the very free use of opium, not only in flatulent colick, which is already well established, but even in the strangulated hernia, provided it do not occasion sickness at stomach, which my patient never had from the use of it. If he, a little thin man, far advanced in life, could bear 180 drops of laudanum, pray, what is the proper dose for the robust and athletic? Do we not often trifle in the exhibition of this most excellent medicine?

X.

THE INQUIRER, No. II.

On the Inexpediency of erecting Foundling Hospitals.

"Down then with Foundling Hospitals, more noxious than pestilence and famine."—*Kames.*

THE attention of the medical philosopher may often be extended with advantage to subjects which seem to lie beyond his province. Thus the application of public charity is worthy of his most serious consideration, and so far as it is intended to relieve physical wants, or to remove moral evils by physical means, his intimate knowledge of the nature and constitution of man eminently qualifies him to direct how it may be most beneficially exercised. In the distribution of private charity, the individual is influenced by motives of humanity, or some momentary impulse, and in this propensity he may safely be indulged; for although ostentation, or the desire of getting rid of clamorous importunities, and removing disgusting impostors, may sometimes induce us to throw away what would have afforded effectual relief to objects more deserving of assistance, yet private charity will seldom be so considerable or promiscuous as to become a public evil. Besides, that attention and sympathy which commonly accompany individual charity more effectually command the gratitude, and improve the morals of the relieved, than the most liberal allowance from a fund on which they have a real or imaginary claim. But public charity requires the most active superintendence, and the most unceasing vigilance, to prevent it from becoming a public burden, and a public nuisance. The delight we experience in indulging the feelings of humanity, the approbation of our fellow-citizens, and the appearance of utility in public institutions, often induce us to squander immense sums, for which no adequate benefit results to the community. As the various and numerous distresses of the poor far exceed any funds which could be collected for their relief, whatever is not applied in the best possible manner is misapplied, and therefore, in their distribution, partial humanity must be totally disregarded, and public utility alone consulted.

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The first object of charity, in all instances, is to perform the greatest good with the least means; whenever, therefore, a public institution relieves any of the distresses of the poor more effectually and economically than if they were individually assisted, and whenever the relief granted holds forth no temptation to increase the number of those applying for it, or in the most distant way to encourage vice or idleness, then are public institutions truly useful. Of this kind are almost all the institutions for the relief of the diseases and infirmities of the poor. No man will break a limb, because there is an hospital in which it will be set, nor will any man become deranged, because there exists a lunatic asylum for his reception. On the contrary, public institutions, whose objects might be more effectually and economically obtained by individual assistance, are at least hurtful; and when they hold forth a temptation to increase the number of applicants, and to encourage vice and idleness, they become pernicious. On these principles, foundling hospitals have been already condemned by enlightened philosophers. "Of all the mischiefs," says Lord Kames, "which have been engendered by over-anxiety about the poor, none have proved more fatal than foundling hospitals."

As this opinion directly militates against the appropriation which has been made of a considerable fund towards the erection of a foundling hospital in Edinburgh *, a high degree of local and temporary interest is thus attached to an inquiry into the expediency of the measure. In a medical publication, its effects on population naturally form the principal object of investigation, but these are so intimately connected with its influence on the morality and expenditure of the state, that, in investigating the former, frequent reference must be had to the latter.

The principal intention of foundling hospitals is to preserve and educate, as useful citizens, children which might otherwise perish from neglect or actual violence. Let us examine how far they attain this end. Children are most commonly deserted soon after birth; for maternal affection is not yet confirmed by habit,
and

* We, &c. "do finally and unalterably resolve to apply the free income arising from the residue of the said estate, for the pious and charitable purposes of preventing child-murder, and for an hospital within the city of Edinburgh, for receiving, secretly, infant children, and bringing them up to be useful members of society; and by receiving, privately, women big with child, and assisting them in their delivery, so as to conceal their shame, and taking care of their children as foundlings."—Deed of Destination of the Funds of Mr John Watson, W. S. 13th August, 1764.

and at that time only can the hopes of concealment act as a motive, when children, at that tender age, are intrusted to the care of the community, the difficulty of rearing them is immense. What a feeble, helpless being is man at his entrance into this world! Rudely expelled from the womb, in which he received existence, into an ungenial element, his first sensation is pain, his first cry the cry of sufferance: With a frame tender and delicate, and a mind scarcely yet awakened, he is totally incapable of contributing towards his support. Dependent on others for his preservation, the human infant has little chance of surviving, when its numerous wants are not unremittingly supplied by maternal affection. In proof of these assertions, the history of all foundling hospitals may be adduced.

The most ancient establishment of this kind was instituted at Montpellier in 1181, a part of the Hospital St Esprit being appointed for the reception of destitute children. A similar institution was founded at Lyons in 1533. At that time it was the practice throughout Christendom that an exposed child remained the slave and personal property of the person who took it up and reared it. In the 17th century, the number of deserted infants increased considerably; and in Paris they were found in the streets helpless, and left to the mercy of those who chose to lift them. Their miserable fate, about 1638, excited the compassion of a rich widow, who caused them to be brought to her, and reared them in her house. For a time, this, like other undertakings of the same kind, was attended with success; but the most shocking abuses soon crept in. Her servants disposed of these children at a fixed price. Many of them were sold to beggars, who, by dislocating their joints, and otherwise maiming them, endeavoured to increase the profits of their scandalous trade. In 1640, Louis XIII., to correct these and other flagrant abuses, founded the foundling hospital at Paris, the most dreadful scene of butchery, says Girtanner, the world ever saw. Liancourt, in his report to the National Assembly, asserts, that, of the children admitted, two-thirds died during the first month, and of these, three-fifths before they were given to nurse. Of 101,000 children admitted in the preceding 16 years, in 1790 only 15,000 remained. Before the 2d of George III. the mortality in the London workhouses was equally great; and Mr Hanway mentions instances of every child received under a twelvemonth dying within the year. In 1791, Sir John Blaquiere stated to the House of Commons of Ireland, that of 19,420 infants admitted into the Foundling Hospital of Dublin, during the last ten years, 17,440 were dead or unaccounted for; and that of 2180 admitted during 1790, only 187 were then alive.

In 1797, he got a committee of the same house appointed to inquire into the state and management of that institution. They gave in their report on the 8th of May 1797; by which it appeared that, within the quarter ending the 25th March last, 540 children were received into the hospital, of whom, in the same space of time, 450 died: that, in the last quarter, the official report of the hospital stated the deaths at three; while the actual number was found to be 203: that from the 25th March to 13th April, nineteen days, 116 infants were admitted; of which number there died 112. Within the last six years there was admitted 12,786; died in that time 12,651; so that, in six years, only 135 children were saved to the public and to the world. In the Charité of Berlin, where some enjoyed the advantage of being born in the house, and of being suckled by their mothers six weeks, scarcely a fourth part survived one month. Every child born in the Hotel Dieu of Paris was seized with a kind of malignant apthæ, called *le muguet*, and not one survived who remained in the house. At Grenoble, of every 100 received, 25 die during the first year; at Lyons, 36; at La Rochelle, 50; at Munich, 57; and at Montpellier, even 60. At Cassel, only 10 out of 741 lived 14 years. In Rouen, one in 27 reached manhood, but half of these in so miserable a state, that of 108 only two could be said to be added to the useful population. In Vienna, notwithstanding the princely income of the hospital, scarcely one in 19 is preserved. In Petersburg, under the most admirable management and most vigilant inspection of the Empress Dowager, 1200 die annually out of 3650 received. In Moscow, with every possible advantage, out of 37,607 admitted in the course of 20 years, only 1020 were sent out.

In some of these hospitals it is attempted to rear the children in the hospital itself; in others they are given out to nurse in the country. Experience has decided in favour of the latter plan: It is less expensive to the state, the mortality is less, the children are more likely to become efficient citizens, and soon become useful to the people to whose care they are intrusted. It has, however, been objected, that it is almost impossible to superintend the treatment of the children, when dispersed so widely; that there is great danger of spreading the venereal disease in the country, by giving out syphilitic children to nurse; and that it will be impossible to find nurses sufficient, where the foundlings are numerous. These objections, however, are not solid; for it will be more easy to find a sufficient number of nurses who will undertake the rearing of a child in their own houses, than who will immure themselves in an hospital; and if, to save the number and expense of nurses, you commit to the

care

care of each, in an hospital, six, five, or even four children, some of whom are generally diseased, you condemn all to a slow and cruel death. The superintendence of their treatment is of little consequence; for it will be insufficient to prevent it, if the nurses feel not some affection for the child, and where they do, it is unnecessary. The propagation of the venereal disease is the most important objection, and is only to be obviated by careful examination and due precautions, until the health of the child be ascertained. Though attended with these and other inconveniences, this method of assisting these helpless beings is to be preferred; and accordingly we find it sanctioned by the British Parliament, which, in 1761, passed an act for obliging all parishes within the bills of mortality to send all children under six years of age, within a fortnight after they were born in or received into the workhouse, to a distance not less than six miles from London, to be nursed until they are six years of age. Dr Price allows that this act prevented many deaths, and Mr Howlett reckons, that a diminution of 2100 burials a-year has been occasioned by it. Indeed, in nursing hospitals, the mortality is dreadful, the sufferings of the infants extreme.

The causes of mortality, almost necessarily connected with foundling hospitals, are, insufficient and unhealthy nourishment, want of cleanliness, cruelty and inattention of the nurses, confinement, impure air, and want of exercise. But these causes, say the advocates for such hospitals, may be all removed, and the mortality of foundlings reduced as low as that of infants in general. This, however, is merely the speculation of some enthusiastic philanthropists, and never can be realized, unless a nurse can be procured for every child, and some means be found of imparting to her the feelings of a mother. The difficulty of procuring nurses for the hospitals has been always severely felt; three, four, five, or even six children, are often given to one woman to suckle; the whole are consequently starved and shrivelled; and, should one of them be diseased, the whole are soon infected. At Marseilles, it is the custom to keep those girls, who come to the hospital to be delivered, two years as nurses. Several children are allotted to each of them, but, as long as their own children survive, it is easy to foresee what must become of the others. Besides, the dread of such a task frightens pregnant girls from entering the hospital; and, to this day, the institution has completely failed in its principal object. In England, multitudes of children are brought up on the spoon, but all experiments of that nature in public hospitals have been unsuccessful.

‘Who can learn these facts,’ says Oslander, ‘and not be wounded to the soul? who think of a foundling hospital without hor-

ror? It seems to be the fate of most of these unhappy foundlings, that while humanity endeavours to rescue them from a violent death, it only collects them to protract their miseries at an enormous expense. If we search the records of foundling hospitals, we can hardly suppress the thought that the curse of the Almighty rests upon their walls, and that they are the abode of the destroying angel.

CHILDREN MURDERED HERE AT THE PUBLIC EXPENSE,

was inscribed by a satyrist over the gate of such an hospital. Alas! it is almost true. What a preventive of child-murder, to snatch an infant from the knife, and kill it with slow poison; for what else is the milk of these nurses, and the pestilential vapour of these abodes!

What then are we to think of the influence of foundling hospitals on population? Are we to ascribe to them the preservation of the few who survive, or are we to accuse them of the destruction of the multitudes who perish? Are we to accede to the eulogium pronounced on that of Moscow by Mr Tooke, "That of all the children hitherto brought up in it, not the hundredth part would have been alive but for that institution; and that consequently, even in times of the greatest mortality, it preserves to the state a very considerable number of young citizens;" or are we to acknowledge the justness of the opposite opinion of Mr Malthus, "that if the children received into these hospitals had been left to the management of their parents, taking the chance of all the difficulties in which they might be involved, a much greater proportion of them would have reached the age of manhood, and have become useful members of the state."

The determination of these questions rests on this single circumstance, Whether or not these children would have been deserted, had no such hospitals existed? Wherever it is considered as a crime, and consequently as a disgrace, in a parent to desert her offspring, it will never be done unless to avoid greater evils; to escape the infamy attached to illegitimate pregnancy, or in consequence of absolute want of the necessaries of life. In the latter case, the crime may be prevented by cautiously extending relief, as in other cases of poverty; but, in the former, the attention of the Legislature must be directed to the root of the evil, to correct the habits of licentiousness from which it proceeds. Penal laws against illegitimate pregnancy will naturally increase the desire of concealment, and the desire of concealment may lead to the desertion, or even murder, of the infant; but by operating as a powerful restraint on licentiousness, they render the

original

original crime less frequent, and probably rather tend to diminish than to increase its eventual effects. All children deserted in defiance of such laws, or who become destitute by the death or total incapacity of their parents, have a right to the protection of the public; and as many of them as are thereby preserved constitute an actual addition to the population of the state. But institutions for maintaining them under these circumstances have no direct tendency to prevent child-murder, and should not be confounded with foundling hospitals, properly so called, which authorize and facilitate the desertion of children, with the intention of preventing child-murder. Now, what are the motives which lead to this unnatural crime? Are they not the desire of concealing illegitimate pregnancy, or of escaping the labour of rearing the infant? So far as the latter motive is concerned, foundling hospitals operate as a direct tax on industry and virtue, and as a direct encouragement to idleness and vice; but if child-murder proceeded only from the former motive, foundling hospitals would have little effect in preventing it. For illegitimate pregnancy must either be infamous or not; in the one case, the same endeavours to conceal it would be used as if no hospital existed, and, in the other, there would be no desire of concealment, consequently no child-murder, from that motive.

But, for the sake of prosecuting our inquiries, let us admit that foundling hospitals are as complete a preventive of child-murder as their advocates suppose; it is evident, that so long as illegitimate pregnancy is considered as disgraceful, so long as the desertion of children is considered as infamous, they will have no effect, unless the admission into them be secret, indiscriminate, and unlimited. Suppose it limited, the hospital full, and the basket removed, what will be the consequence? The desertion of children having, till that moment, been authorized, they will be brought as before, deposited on the street instead of the basket, and the hospital must admit them, if they be discovered, before they have died of cold and hunger. If the admission be not indiscriminate, the concealment cannot be perfect; and to what class of women shall its benefits be confined? To the worthless? Certainly not. To the unfortunate victims of seduction? If it could prevent child-murder, yes. In London, in order to the reception of the child, the previous good character, the present necessity of the mother, and the desertion of the father, must be inquired into, and whether it will be attended with the consequence of her being replaced in a course of virtue, and in a way of obtaining an honest livelihood *. Such restrictions are

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laudable,

* Account of the Foundling Hospital, page 62.

laudable, but they completely exclude those most likely to maintain their reputation at the expense of so enormous a crime.

Wherever the reception is indiscriminate, their effects are pernicious to the morals and happiness of the people; they oppress the industrious by their expense, and they diminish population. The evils they necessarily produce are infinitely worse than those which they are intended to obviate. The dread of illegitimate pregnancy, and its consequences, in the present state of society, is one of the most powerful safeguards of female chastity. Foundling hospitals, by removing in a great measure the fear of these, directly encourage licentiousness, and when pregnancy is the consequence, the infant is almost of course sent to the hospital, and the mother deprived of the best means of atoning for her imprudence, and showing the sincerity of her repentance; means which seldom fail of restoring her reputation, and of ensuring to her, in her old age, the gratitude and protection of the child, whose preservation she accomplished, even at the risk of perpetuating her shame.

But the effects of indiscriminate admission on the morals of the married poor are, perhaps, still more to be dreaded. When we consider the dangers to which the birth of a child exposes the mother, the pains it inflicts, the exertions its maintenance requires from her yet enfeebled frame, the anxiety of mind, numerous inconveniences, deprivations of enjoyment, and augmentation of labour, which, among the lower orders of society, are necessarily connected with its continuance in life, we must immediately be aware of the danger of diminishing the necessity of submitting to these temporary inconveniences and increase of labour. Sir F. Eden, who has investigated the situation of the poor with particular attention, observes, that "the terror, which poor-houses and workhouses create, operates more in preventing grown people from entering them themselves, than from consigning the younger part of their family thither. It is perhaps not an unnatural course for a mother to abandon her child to the parish officers, who, she is assured, will provide for it, for some years at least, better than she possibly could; more particularly when that child is the fruit of an illicit amour, and when, by leaving it at the workhouse, she can often screen her character from detection. Considered in this point of view," he concludes, "the poor laws may be said to offer an encouragement to debauchery."

Foundling hospitals, in this way, tend to loosen the ties between parent and child, the chief source of happiness and virtue among the poor, and by holding forth temptations to the idle and indolent, too powerful for their resistance, seduce many of them to
deprive

deprive themselves for ever of the greatest consolations of their lives, and of the support of their old age and infirmities; the community thus drawing on itself the support of the parents as well as of the children. "At every occasional pinch for food, away goes a child to the hospital, and parental affection among the lower sort turns so languid, that many who are in no pinch relieve themselves of trouble by the same means."—And many a one, whose last moments might have been honoured by the tears of a virtuous family, is left to perish unheeded in a work-house cell. "An occasional child-murder, from false shame, is saved at a very high price, if it can only be done by the sacrifice of some of the best and most useful feelings of the human heart, in a great part of the nation."

But these arguments, it may be said, are merely the opinions of speculative philosophers: let us then bring them to the test of experience. In Petersburg, the annual births are about 17,550, of whom 3650 go to the hospital. In the district of Moscow, the total births may be about 49,629, and in 20 years from the institution of the hospital, 37,607 had been admitted into it. In Lyons, in the year 1772, 5320 children were born, of whom 977 were sent to the foundling hospital. In the same year, the births at Paris amounted to 18,713, of whom 7676 were abandoned to the hospital; and of these, Buffon clearly proves that more than one half were legitimate children. It is also to be remarked, that there is a constant increase of the proportion of children deserted. In Paris, the number of foundlings in 1670, 1680, 1700, 1740, 1749, 50, 51, 52, 53, 54, 55, 64, 65, 1772, and 1776, was 312, 690, 1740, 3130, 3775, 3785, 3783, 4127, 4329, 4231, 4273, 5560, 5495, 7676, and 6419, respectively. In London, in consequence of the indiscriminate admission of children not exceeding two months being sanctioned, "on the 2d of June 1756, the first day of general reception, 117 children were received. From that time to the 31st December 1757, 5510 children were admitted into the hospital;" and the admission would probably, according to Sir F. Eden, have soon consisted of half the children born within 100 miles of the metropolis, but for the act of 1760.

These facts indisputably prove, that foundling hospitals increase the number of deserted children; and as the mortality among foundlings is greater than among other children, we cannot refuse our assent to the position of Mr Malthus, that "if a person wished to check population, and were not solicitous about the means, he could not propose a more effectual measure than the establishment of a sufficient number of foundling hospitals, unlimited

unlimited in their reception of children *." Of those who survive the hardships to which they are exposed in such places, the greater part are incapable, from bodily infirmity, to support themselves; and, with regard to their morals, Arthur Young has observed, that "foundling hospitals encourage that vicious species of procreation which does not deserve the name of population; that the encouragement afforded by foundling hospitals is an encouragement of vice and inhumanity, and a public premium given to the banishment of the best feelings of humanity."

Another serious evil to be adverted to is, that, after they have been found by experience to be injurious, it is extremely difficult to put a stop to the evils they have introduced. The habit of deserting children, having been once allowed, is slowly renounced by those whose morals it corrupted, and whose industry it has suppressed. On the 9th of February 1760, a committee of the House of Commons, appointed to inquire into the effect of the indiscriminate admission of foundlings,

"Resolved, That it is the opinion of this committee, that the general admission of all children indiscriminately, under a certain age, into the hospital for the maintenance and education of exposed and deserted young children, to be maintained there at the public expense, has been attended with many evil consequences, and ought to be prevented.

"Resolved, That it is the opinion of this committee, that no children should be received into the hospital for the maintenance and education of deserted young children after 25th March next, to be maintained there at the public expense."

There were at this time above 6000 children on the establishment, almost all of them under five years of age; and, notwithstanding the strong resolutions of the Commons, "six years passed before the number was reduced so low as 4300; and it was not till after the year 1769 that, by apprenticing all who could be placed out, they were reduced below 1000 †."

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* It must, however, be remarked, that foundling hospitals only diminish the actual population *directly*, by increasing the comparative mortality of the children who are born; *indirectly*, they probably tend to augment the actual population by removing one of its greatest checks, the care of providing for our offspring. But this view of the subject is the most fatal of any to the opinions of those who think foundling hospitals deserving of support, as a means of preventing child-murder; for, in this way, they operate upon the same principle as the permission of child-murder, from which it only differs in the enormous expense, and protracted cruelty with which they are attended.

† Account of the Foundling Hospital, p. 33.

If the facts and arguments already adduced be at all conclusive with regard to the injurious effects of foundling hospitals on the population and the morals of the people, it may appear superfluous to have recourse to any financial argument ; but probably few of the advocates for foundling hospitals are at all aware of their enormous expenditure, or how many extensive and unequivocally useful charities it would be sufficient to support.

The foundling hospital at London, from its commencement to December 1757, placed out only 105 persons to do for themselves, in return for an expense of 166,000*l.*, being 1571*l.* each person ! In 1760 it required an income of above 45,000*l.* for its support ; and its total expense for the ten years preceding 1770 could not be less than 525,000*l.*, of which 495,000*l.* were granted by Parliament. In 1753 its income was only 1050*l.*, and its expenses 5000*l.* Besides a tax of 1*s.* 4*d.* a pound on the rent of houses in Dublin, the Irish Parliament has at different times granted 158,696*l.* towards the payment of the debts of the foundling hospital in Dublin. From a foundling hospital in a respectable German principality, after twenty years perseverance, only one foundling reached the years of manhood, at an expense to the state of 20,000 dollars ; a greater sum, says Girtanner, than would have been sufficient for the education of its hereditary prince. The current expenses of the Peterburgh hospital are, according to Malthus, 150,000*l.* annually.

From this inquiry it evidently appears, that foundling hospitals are hurtful in every point of view, whether we consider their effects on the morals, population, or expenditure of the state ; and that, whatever objections may exist to the abolition of those already established, the Legislature, consistently with their resolutions of 1760, ought not to permit ostentatious or mistaken charity to introduce into any part of these kingdoms an evil of such magnitude.

PART II.

CRITICAL ANALYSIS.

I. & II.

Les Lois éclairées par les Sciences physiques, ou Traité de Médecine légale et d'Hygiène publique. Par FRANÇOIS EMMANUEL FODÉRE', Médecin de l'Hospice d'Humanité, et de celui des Insensées à Marseilles. 3 tomes, 8vo. Paris, An. VII.

Medicine légale et Police médicale de P. A. O. MAHON, Professeur de Médecine légale, et à l'Ecole de Médecine de Paris. 3 tomes, 8vo. Paris, An. X.

WHATEVER aid the science of medicine can contribute towards the good of the state, and the execution of its laws, has been by the Germans denominated State-Medicine; a new but not improper appellation for what has by some writers been denominated Medical Jurisprudence.

It comprehends both Medical Police and Juridical Medicine; the former consisting of the medical precepts which may be of use to the legislature, or to the magistracy; the latter being the aggregate of all the information, afforded by the different branches of medicine, which is necessary for elucidating doubtful questions in courts of law.

Although, in the Justinian and even in the Mosaic code, there be some traces of juridical medicine, such as determining the real period of birth, with a view to prevent the imposition of spurious children, it properly originated with the code of laws enacted by the Emperor Charles V., under the name of *Constitutio criminalis Carolina*; in which it is ordained, that the opinions of physicians should be taken with regard to the danger of wounds, child-murder, murder, poisoning, procured abortion, concealed pregnancy, &c. These directions, and the impossibility which was found of determining many questions by simply legal means induced some legislators to enjoin, that all tribunals and judges

judges should procure from sworn physicians, appointed to this office, their opinions concerning these and similar subjects.

Since that time, it has been treated systematically by many learned men; such as, Fortunatus Fidelis, Zacchias, Alberti, Hebenstreit, Haller, Ludwig, Plenck, Metzger, and recently by the authors now before us, Foderé and Mahon. Numberless dissertations have been written on all its parts; and, amongst those who have contributed to its advancement, we may reckon Ambrose Paré, Blegny, Devaux, Louis, Petit, Bohn, Buttner, Morgagni, Camper, Hunter, and Gruner. Collections of cases, illustrating its principles, have been made by Amman, Daniel, Bucholz, Pyl, Scherf, and Metzger, and professorships for teaching it have been instituted in many universities.

The study of juridical medicine has hitherto been chiefly confined to the Germans, and the benefits resulting from their labours have scarcely been in any degree communicated to other countries. In Britain, in particular, if we except the very imperfect elements of medical jurisprudence by Dr Farr, the heads of Dr Duncan's Lectures on that subject, and some observations in works connected with it, such as the admirable treatise on Medical Ethics by Dr Percival, it has been almost entirely neglected. This is the more to be regretted, as juridical medicine ought to form the basis of a part of our written code of laws. Every day decisions are given in the various courts of justice founded on the opinions of medical men, but they remain scattered in voluminous records, and almost inaccessible to those whose duty it is to study them. For a system of juridical medicine materials are not deficient. It is only necessary to collect and arrange them. Such a work would be of infinite advantage to the community at large. The judge would then be enabled to compare any medical evidence laid before him with that given by others on similar questions; the medical man examined would be aware of any peculiarities in his opinions, and be prepared to explain them; decisions, so far as they are influenced by these, would gradually become uniform, and at last a code of medical jurisprudence, founded on precedent, if not on the principles of justice, would be formed.

Juridical medicine, founded on the laws of the animal economy, may be treated of either according to the principles of natural justice, or with a direct reference to the customs and laws of a particular country. The former, as being immutable and universal, is by far the most important; and as contributing towards such an enlarged view of the subject, the works now before us, although peculiarly adapted to the jurisprudence and police of France, may be perused with advantage by the medical philosophers

phers of Britain. The arrangement chosen by these authors is founded on different principles. Prof. Mahon, after some general observations on the history and progress of juridical medicine, and the qualifications necessary for practising it, treats in succession of impotence, defloration, rape, sodomy, pregnancy, procrastinated birth, illegitimate birth, abortion, and monstrous births, doubtful conditions of the mind or body, mental derangements, pretended, concealed, and imputed diseases, wounds, apparent death, violent death, inspection of bodies, poisoning, child-murder, drowning, hanging, and, lastly, the art of drawing up reports; without any attention to the natural connexion of these subjects, or to the courts of justice in which each is commonly investigated. Now, although it may be extremely difficult, or even impossible, to form an arrangement which may not be liable to many well-founded objections, still the most defective must be considered as preferable to none, as it points out its own defects, and naturally leads to improvement. In our future remarks, we shall therefore follow Mr Foderé, our other author, who is extremely systematic, although, in attempting to render his work very complete, he includes in it many objects which do not strictly belong to juridical medicine.

In an introduction of considerable length, he sketches the history and progress of the science; points out the manner in which it may be rendered practically useful, enumerates the qualifications required in those who may be called on to make any report, and states minutely every circumstance to be attended to in drawing up reports. The chief obstacles to the further improvement of juridical medicine he conceives to be, the severity of the principles of criminal jurisprudence, and carelessness in the selection of the medical men appointed to report. The former of those evils happily does not exist in this country, where justice always leans to the side of mercy, the latter does in a very great degree; the reports of physicians, surgeons, and apothecaries being often admitted, and even called for by authority of the court, on questions which fall properly within the cognizance of a different branch of the profession, and of which they may comparatively be very ignorant.

The art of drawing up reports is by no means easy. It requires not only a perfect professional knowledge, but a certain acquaintance with the forms of laws. The circumstances principally to be attended to are, to state the facts distinctly and perspicuously, to omit nothing which may tend to elucidate the object of inquiry, to introduce no extraneous matter, and especially to avoid all hypothetical opinions, and even reasoning, when it does not immediately serve to place the facts in a more perspicuous

perspicuous and striking point of view. To assist the young practitioner, M. Foderé has subjoined various forms of reports. Prof. Mahon, with the same view, has given examples of reports in particular cases, to which his editor, M. Fautrel, has subjoined some critical annotations.

M. Foderé divides juridical medicine into, 1st, Exculpatory, or Incapacitating; 2^d, Civil; and, 3^d, Criminal.

The first treats of those conditions of the mind or body which prevent the individual from being considered as a free agent, or render him incapable of fulfilling his duties towards society. In both cases, he should be placed under the protection of the law; in the one, to prevent him from being oppressed by the execution of what he is unable to perform; and in the other, to prevent him from injuring himself, his own interests, or those of others. M. Foderé is therefore naturally led to investigate the period at which puberty, majority, and senility, are supposed to commence; the various kinds and degrees of mental derangement; the attentions due to the delicacy of the female sex, especially when pregnant; feigned and supposititious diseases; and the circumstances constituting exemptions from military service or punishment.

According to the law of Scotland, a child is in pupillage from its birth till the age of fourteen, if a male, and till twelve, if a female. Minority begins where pupilarity ends, and continues till majority, which takes place at twenty-one years, both in males and females. M. Foderé, however, is of opinion that puberty and senility are to be judged of by the physical and moral development and decay of the individual, and not by any limited number of years. Some attention is also to be paid to the nature of the question in which the determination of the stage of life is involved. For example, he thinks, that although a person of fourteen years may be perfectly conscious of the criminality of murder, he is totally incapable of comprehending abstract political crimes.

On the interesting and difficult subject of mental derangement he enters at considerable length, and perhaps rather too unlimitedly. He notices all its varieties, and endeavours to explain them as depending either on excitement, or collapse of the sensorium. The whole of his observations on this subject, being derived from actual observation, are well worthy of perusal.

Questions frequently occur in civil courts of justice, which can only be decided by a reference to the laws of the animal economy. The examination of these constitutes the second part of M. Foderé's work. In the preceding part he considered man as an insulated being, incapable of fulfilling his duties to society,

or not to be accounted a free agent. In the present, he regards him as forming a link of the great chain of society, amenable to its laws, and responsible for his actions. He treats in succession of the signs of virginity or defloration; of the requisites for entering into the state of marriage; of the circumstances authorizing separation or divorce; of conception and its consequences; of pregnancy, real and supposed; of the symptoms indicating the death of the foetus in the womb; of circumstances indicating the real father in doubtful cases; of the proofs of personal identity; and of the means of determining the survivor of several individuals of the same family, who perish by a common accident. Many questions connected with these subjects do not admit of any satisfactory solution on physical principles, and therefore are only to be determined according to the principles of natural justice. In the last case, for example, where husband and wife, parent and child, die by some common accident, much ingenuity may be displayed to determine the survivor, but almost always in vain. Upon no physical principles can it be determined unerringly, or even with any sufficient degree of probability. The signs of defloration are little less obscure. In some suspected cases we may find the proofs of an absolute physical chastity, but the absence of these marks will scarcely warrant us to conclude on the incontinence of the party, unless in combination with other evidence, moral or presumptive.

All children born in wedlock are presumed to be legitimate, according to the rule, *Pater est quem nuptia demonstrant*. But this legal presumption may be overruled in Scotland by a contrary proof, that is, by direct evidence that the mother's husband could not be the father of the child. "The two principal grounds upon which this presumption may be defeated, are, the husband's absence from the wife, and his frigidity or impotency. Impotency is of most difficult proof; and few or no instances have occurred, in this kingdom, of questions either of divorce or bastardy, upon that medium. As to bastardy on the head of absence, the great difficulty is to fix the precise period of time, backward from the birth of the child, at which, if the husband be absent from the wife, the child is to be deemed unlawful. The solution of this doubt depends on two questions, more proper for the discussion of physicians than of lawyers, viz. What time is necessary for the production of a living child? And how long a woman may continue pregnant before her delivery? But our supreme court have, from the favour of legitimacy, adjudged, that, to fix bastardy on a child, the husband's absence must continue till within six lunar months of the birth. As to the second, a child, after the tenth month, is accounted a bastard."

bastard*." The latter of these judgments, M. Foderé thinks, may frequently be unjust; and he adduces several strong cases in support of his opinion. Three months after his own wife exhibited symptoms of pregnancy, he left her to join the army of Italy, and was five months absent. His wife was not delivered until four months and a half after his return, and the child was very small, and destitute of hair, although in other respects mature. As the authority of this example rests entirely on the virtue of the wife, it will not be sufficient to most people that it was not doubted by the husband. But the following curious fact rests on a less questionable basis.

‘Dulignac, longtemps chirurgien-major du régiment d’Asfeld, certifie aussi que des trois derniers enfants dont sa femme était accouchée, deux étaient nés à treize mois et demi de grossesse, et le troisième à onze mois. “Il faut,” dit-il, “laisser aux maîtres de l’art le soin d’expliquer, s’il est possible, des phénomènes aussi singuliers; mais je désirerais qu’on ne niât pas le fait, si on ne peut en donner l’explication. Ce n’est point ici une femme et des collatéraux qui font leurs efforts pour embrouiller la naissance d’un posthume dans le détours de la chicane; c’est un homme de l’art qui reconnaît une grossesse, à quatre mois et demi, par le signe le plus sensible, le plus certain, le plus évident, par le mouvement de l’enfant, dont la naissance n’arrive que neuf mois après.”

Besides these two circumstances of impotency and absence, which are allowed by lawyers to defeat the presumption that the husband is the father of the child, there is another which, though overlooked by them, is still more decisive, that is, when the appearance of the child evidently proves that its father must have been of a different race from the husband; as when a mulatto child is born of a white woman, whose husband is also white; or of a black woman, whose husband is also a negro.

Dr Percival justly observes, that “physicians and surgeons are often called upon to exercise appropriate duties, which require not only a knowledge of the principles of jurisprudence, but of the forms and regulations adopted in our courts of judicature.” As that enlightened philosopher has confined his observations to the practice of the English courts, we trust that an attempt to combine similar information respecting the criminal law of Scotland, on the different subjects we shall have occasion to notice in analysing M. Foderé’s work, will be received with indulgence, if not with gratitude, by our readers. We need scarcely say that Professor Hume’s excellent Commentaries on the Law of Scotland,

* Erskine’s Institutes of the Law of Scotland, Book I. tit. 2. cap. 3. § 50.

Scotland, respecting the description and punishment of crimes, are the source from which it is derived.

The crime of rape is justly described as one of the most grievous injuries which an individual can sustain; being a robbery of that wherein a woman's honour, her place in society, and her estimation in her own eyes, depend, and being also in its perpetration necessarily accompanied with great alarm and terror, and with actual violence to the person. By immemorial custom, the punishment of rape is death. This crime is independent of the age of the female, of her situation, she may be maid, wife, or widow, and even of her character and way of life, even though it were that of a public prostitute. For conviction, it is necessary to prove, 1st, Actual intromission, and 2^d, The employment of force in its consummation; but it is held as forcible knowledge, if the female discontinue her resistance out of fear of death, or be rendered incapable of it by the administration of narcotic drugs, or be under the years of puberty. To elucidate both parts of this proof, professional knowledge may therefore sometimes be necessary; but, from the very nature of the crime, its forcible perpetration is rarely probable, unless when there is great disparity of strength, or other undue means have been employed, and its actual consummation does not admit of physical proof, except in the case of the previous existence of the signs of virginity, and even then it is uncertain and ambiguous.

M. Foderé is of opinion, that in most cases, the punishment of rape with death, and, indeed, the law in general regarding sexual connexion, are more gallant than just. He therefore thinks it would be just to distinguish rapes according to the various degrees of criminality, according as they were the simple effect of a violent attachment, of libertinism, and of libertinism aggravated by cruelty.

Procured abortion is a most unnatural species of murder; so much so indeed, that our lawgivers seem to have considered it as superfluous to reckon it in the list of crimes. Mr Hume expressly says, that from the charge of homicide "is excluded all procuring of abortion, or destruction of future birth, whether quick or not: because, though quick, still it is only *pars viscerum matris*, and not a separate being, or such of which it can with certainty be said, whether it would have become a quick birth or not." In this instance our criminal law is certainly too lenient; for there can be no doubt of the enormity of the crime, and it is certain that it is sometimes committed. It is no argument against the necessity of a statute for preventing this crime, that, although frequently attempted, the means employed are either totally inadequate to the purpose, or are so violent as at the
same

same time to destroy the mother, which brings it within the case of homicide. The statute should be made to include these attempts; for if its actual perpetration were necessary for conviction, in very few cases only would it admit of physical proof, and the utmost severity of the law should await that professional man who should so far disgrace his art as to become an hired assassin, and to employ the knowledge given him for the preservation of the species as the means of destroying it. The difficulty of obtaining legal proof in cases of child-murder, and the frequency of the crime at one period, gave rise to the act of 1690, which obliges a jury to convict on certain presumptions of guilt, without direct evidence of murder. The circumstances selected for this purpose are, that the woman has concealed her situation during the whole period of pregnancy, and has not called for help to her delivery, and that the child is found dead or missing. In prosecutions in terms of this act, professional men may be called to prove that the woman was actually pregnant, and has been delivered: on the other hand, the woman is entitled to bring proof that the birth was not ripe, but an abortion; though, if she fail, the act presumes that it was born alive. M. Foderé had treated of the proofs of parturition in a former part of his work; in the present he therefore confines himself principally to the circumstances indicating whether the child was born alive, or was still-born; and, lastly, whether, if born alive, it died a natural death, or from omission of necessary precautions, or from actual violence inflicted on its body. As, from the extreme severity of our statute, this crime is commonly prosecuted as simple murder, the last investigation is of importance in this country, as well as in those where no such statute exists. We need scarcely inform our readers, that although the experiment, whether the lungs sink or swim in water, should always be made with them both when entire and cut in pieces, it is not always to be depended on.

In suppositious birth, the circumstances to be attended to in the report are, whether the woman has been delivered, and whether the age of the child corresponds with the alleged period of delivery.

In juridical medicine, a very extensive signification is given to wounds, as under that appellation are included not only wounds, properly so called, but also bruises, concussions, fractures, dislocations, burns, and every personal injury inflicted by external violence. These may be followed either by death or by curable or incurable bodily injury. In the first case, it is the duty of the medical reporter to determine whether the death was or was not caused by the wound; and, in the others, to give his opinion of the probable event, that the accused may be allowed

or refused his liberty on bail, or to investigate the extent of the injury, to assist the judges or jury in estimating the damages to be awarded. For conviction in a case of homicide, it is necessary that the person die of the harm libelled, without its being aggravated by obstinacy and intemperance on his own part, or by rash and hurtful applications. The harm libelled must also be the certain cause of death, and not one circumstance which, with others, may have contributed to the fatal event, but whose own proper operation cannot be ascertained. It must likewise be the direct cause of death, at least so far as the other supervening causes do not naturally and immediately arise out of it. On the other hand, it is sufficient that the harm libelled be the evident and direct cause of death, even although the person on whom it was inflicted was already in a dying condition, or although, in more favourable circumstances than those in which the violence was offered, the injury might not have had a mortal issue, as from the impossibility of procuring proper surgical aid, or from the severity of the weather, if the injury shall have been the cause of his remaining exposed to it. Moreover, though death do not ensue for weeks or months after the injury has been inflicted, yet if it be of itself severe, and gradually get worse and worse, so that the patient plainly dies of it as a disease, this, in reason and in law, is the same as if he had died upon the spot.

The difficulty of this branch of juridical medicine is therefore apparent, as it requires a perfect knowledge of surgical prognosis. To facilitate its study, systematic authors have made various classifications of wounds: Mr Foderé, for example, first treats of wounds individually according to their situation in the body, then according to their particular nature, and, lastly, according to what he calls, *pour l'ordre judiciaire*. He afterwards points out the supervening accidents which are to be distinguished from the effects of the wound itself, and, lastly, lays down rules for the examination of wounds both on the living and dead body, and for drawing up reports connected with them. In his juridical arrangement of wounds, he divides them into mortal and not mortal. The first class he subdivides into inevitably mortal, and generally mortal; and the second into curable, but with some injury to the functions, and curable without any bad consequence. Although M. Foderé's classification be less imperfect than many others, and although it may be of use to medical practitioners called on to report, we shall not follow it any farther, because, in their reports, they must never allow it to appear that they were directed in their opinion by any artificial arrangement whatever. It has indeed been argued, that it is not enough to say that the person died of the wound,

wound, but that the wound must be characterized as mortal. But in this, as Mr Hume justly observes, the lawyers were taking advantage of the arrangement in books of surgery, where wounds are classed into such as are and are not mortal, and endeavoured to argue, that wherever a person died of a wound not belonging to the mortal class, it must have been *ex malo regimine*, or through misconduct. But the insufficiency of these arrangements has been often proved: thus, in the case of John Shaw, we find three physicians and two surgeons swear, that, "by the rules of their prognostics," the wounds received by James Houston were mortal; whereas Houston was alive, and pursuer in the very process where these gentlemen deposed to this effect.

The means of discovering when poison has been exhibited is one of the most important, but, at the same time, one of the most difficult branches of juridical medicine. It is eminently useful, both for the purpose of enabling us to render effectual assistance to the individual who has been poisoned, and of facilitating the conviction of those who have exhibited it, or of exculpating those unjustly accused of the crime. In every point of view, this is a dangerous and aggravated species of murder, not only on account of the difficulty of detecting it, but also of the deliberate malice with which it is perpetrated, its cruelty, and the impossibility of guarding against it. There is no such thing as an absolute poison; but the law has accurately defined what substances are to be considered as such. "To bring a case under the description of murder by poison," says Mr Hume, "it is not indispensable that the stuff or substance administered be of that kind which is ordinarily known and distinguished as a poison; if the circumstances of the case yield pregnant evidence, on the whole, of the pannel's intention to destroy by means of it, which may not only appear from the known quality and common operation of the thing (as where arsenic is given, or verdigrease), but also from the excessive quantity or the frequent repetition of the dose, being of a substance such as hemlock, tartar emetic, and many others, which are used as medicines; and may also appear from the age or the condition of the patient to whom the composition is applied; as if a few drops of laudanum are given to a new-born infant, or if a person, for some slight complaint, is made to take large and repeated doses of the very medicine the most suited to increase and aggravate it into a mortal illness." M. Foderé has taken much pains in forming a classification of poisons; but the arrangement he has chosen is rather calculated for a natural history of poisons, than to elucidate this branch of juridical medicine. If practicable, the best arrangement for this

purpose would undoubtedly be one derived from their obvious effects on the living body, which, indeed, as well as the other characters by which they may be known; he describes with sufficient accuracy, when treating of the individual articles of his orders and classes. The most general pathological division of poisons is into acrid and narcotic; each of which classes is succeeded by a peculiar series of morbid symptoms.

When either of these occur soon after eating or drinking, there is reason to suspect the administration of a poison of the class to which they belong, and sufficient grounds for a strict investigation. But similar symptoms are produced by other causes; M. Foderé, therefore, very properly dedicates a chapter to those causes of death which may be confounded with poisoning. He then enters very fully into the means of proving it, and the precautions to be attended to by the professional man to whom the investigation is intrusted. The symptoms, the appearances of the body, both external and internal, may afford strong presumption; but, in fact, the only indubitable proof is the discovery of the poison itself, either in the stomach, in the matter vomited, or as applied in some other way to the body. Every thing in which it may be supposed to be present must be examined with the greatest care, the smell, &c. accurately noted: if vegetable matters be found, the plant of which they are a part must, if possible, be determined; if mineral, they may be easily known by their chemical characters; and even when nothing particular is discovered, still they should be subjected to chemical analysis, and their effects tried on a small dog. This last method of discovering poison, however, only affords a strong presumptive proof, as different articles are poisonous to different animals; the chemical proof is therefore to be always sought in preference, and, in the present advancing state of chemistry, it is daily becoming easier and more certain. Thus Morgagni was unable to tell whether a green fluid, found in the stomach of a woman suspected to have poisoned herself, was bile, or the expressed juice of mezerion leaves; a question which now it would not be difficult to solve.

M. Foderé concludes this part of his work with treating of other kinds of violent death, and of the distinction between homicide and suicide. When a dead body is found in the water, it is necessary to inquire whether it was thrown in alive or dead, and whether it was thrown in against the will of the individual or not. The first question is to be determined by the presence or absence of the appearances peculiar to this mode of the death; and the second may receive some elucidation from the external marks of violence on the body.

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With regard to death from hanging, the same questions naturally occur: "L'objet des rapports dans la suspension ou l'étranglement," says Prof. Mahon, "c'est de décider, 1. Si un homme dont on examine le cadavre, a été pendu mort ou vivant. 2. S'il s'est étranglé ou pendu lui-même, ou s'il l'a été par d'autres." The latter of these questions has been represented as frivolous in the Supplement to the *Encyclopaedia Britannica*; and, with an amusing degree of ignorance, it is added, that "we need not surely observe, that no such lesson was ever taught in any university, or by any medical lecturer." As these erroneous assertions are made in a work of reputation, and in an article pretending to give an account of medical jurisprudence, we think it worth while to state, that these questions are discussed by every lecturer on medical jurisprudence; and, for a proof of their importance, we must refer to the various cases quoted by Foderé, in which the fate of the accused depended on the manner in which they were answered. Owing to ignorance of the importance of this very question, the atrocious parricide Pourpre was acquitted, and the innocent and worthy Calas broken on the wheel. "Puisse cet exemple," says M. Foderé, speaking of the latter, "Puisse cet exemple passer de bouche en bouche, apprendre aux juges à être plus circonspects, et aux officiers de santé à ne jamais hasarder à faire des rapports en matières graves, quand ils ne sentent pas toutes les lumières requises. Ceux, qui ont rapportés dans l'affaire de Calas, n'étaient-ils pas aussi coupables que les juges?"

From its very nature, it is evident how necessary a knowledge of this science must be to every medical practitioner, who is liable to be called upon to illustrate any question comprehended under it before a court of justice. On his answer, the fortunes, liberty, and even life of individuals often depend; both judge and jury regulating their decision by his opinion. On the other hand, while he is delivering his sentiments, his own reputation is before the bar of the public. The acuteness of the gentlemen of the law is universally acknowledged; the versatility of their genius, and the quickness of their apprehension, are rendered almost inconceivable by constant exercise. It is their duty to make every possible exertion for the interest of their client, and they seldom leave unnoticed any inaccurate or contradictory evidence. How cautious must then a medical practitioner be when examined before such men, when it is their duty to expose his errors, and to magnify his uncertainties, till his evidence seem contradictory and absurd? How often must he expose himself to such severe criticism, if he be not master of the subject on which he is giving evidence, and have not arranged his

thoughts on it according to just principles? On the other hand, he may deserve and gain much credit by so public a display of judgment and professional knowledge.

Some acquaintance with this part of medical science must be useful at least, and sometimes necessary, to judges and lawyers. They will thus be enabled to estimate how much they may depend on the opinion of any physician, and will know how to direct their questions so as to arrive at the truth, and to avoid being misled by his partiality or favourite opinions. To the lawyer who conducts the defence of an accused person in a criminal case, it is almost indispensable; without it, he cannot do justice to the cause of his client; and the duty of the coroner in England consists almost entirely in deciding questions of juridical medicine.

[This article has already extended to so great a length, that we must delay, to a future opportunity, the observations we meant to have made on the second and more important branch of this subject, Medical Police.]

III.

Facts intended to prove the Yellow Fever not to be contagious, and Instances of its supposed Contagion explained upon other Principles.

By BENJAMIN RUSH, M. D. Professor of Medicine in the University of Pennsylvania.

[See Medical Repository, vol. vi. p. 155. 8vo. New York. 1803.]

THE editors of the American Medical Journals, and most of their correspondents, seem to be decidedly of opinion that the yellow fever is *not* contagious. To give some idea of the evidence on which an opinion so contrary to European belief is founded, we have selected the present paper, both on account of the celebrity of its author, and because it gives a connected view of the arguments by which he was induced to desert the sect of *contagionists*.

He observes, that when fevers are communicated from one person to another, it is either by means of secreted or of excreted matters. In the former way the small-pox and the measles are communicated; in the latter the jail, ship, or hospital fever. The perspiration, by acquiring a morbid and irritating quality, in consequence of its stagnation and confinement to the body in

a tedious jail fever, is the principal means of its propagation. It is confined to sailors and passengers in foul and crowded ships, to prisoners and patients in foul and crowded jails and hospitals, and to poor people who live in small and damp confined houses. It prevails chiefly in cool and cold weather, is never epidemic, and is not communicated more than a few feet from the sick, unless by means of clothes worn by them. It has been but little known in the United States since the revolutionary war, but has now and then appeared in ships crowded with passengers from different parts of Europe. It is a common disease in the manufacturing towns in Great Britain, and has frequently been confounded with the West Indian and American yellow fever, which differs from it in prevailing chiefly in warm climates and seasons; in being the offspring of dead and putrid vegetable and animal matters; in affecting chiefly young and robust habits; in being generally accompanied with a diseased state of the stomach, and an obstruction or preternatural secretion and excretion of bile; in terminating most commonly within seven days; in becoming epidemic *only* by means of an impure atmosphere; and in not furnishing ordinarily those excretions which, when received into other bodies, reproduce the same disease.

That the yellow fever is not contagious in its simple state, and that it spreads exclusively by means of exhalations from putrid matters which are diffused in the air, Dr Rush thinks evident from the following considerations:

1. It does not spread by contagion in the West Indies. Dr Chisholm stands alone among modern physicians in maintaining a contrary opinion.

2. The yellow fever does not spread in the country, when carried thither from the cities of the United States.

3. It does not spread in yellow fever hospitals, when they are situated beyond the influence of the impure air in which it is generated.

4. It does not spread in cities from any specific matters emitted from the bodies of sick people.

5. It generally requires the co-operation of an *exciting* cause with miasmata to produce it; which is never the case with diseases universally acknowledged to be contagious.

Dr Rush next proceeds to explain the seeming exceptions to these assertions.

1. A patient being attended in a small, filthy, and close room.

2. A person sleeping in the sheets, or upon a bed impregnated with other secretions, or being exposed to the smell of foul linen, or other clothing of persons who had the yellow fever. The

disease, in these cases, Dr Rush thinks, is communicated by their putrefaction in the same way as from other animal matters.

3. The protraction of yellow fever to such a period as to dispose it to assume the symptoms, and to generate the peculiar and highly volatilized exhalation from the pores of the skin, which takes place in the jail fever.

4. Miasmata, whether from marshes or other external sources, acting upon a system previously impregnated with the excreted matters which produce the jail or ship fever.

5. The exhalation from the excretions of a patient in yellow fever, acting as an exciting cause in persons previously impregnated with the marsh, or other external miasmata which produce it.

6. The last instance of supposed contagion of the yellow fever is said to arise from the effluvia of a putrid body that has died of that disease.

But Dr Rush is not satisfied with proving, as he supposes, that yellow fever is never excited by contagion; he ventures one step farther, and tells us, that "we are *compelled* to resort to certain noxious qualities of the atmosphere, as the exclusive causes of the prevalence not only of that fever, but (with a few exceptions) of all other epidemic diseases." Here he steps beyond the boundary of sober induction, and enters upon the pathless field of hypothesis. Much to his credit, however, he stops short, and does not accompany his more enterprising guides, but candidly informs us, that we are as yet ignorant of the precise nature of those qualities in the air which produce epidemics.

That the yellow fever is propagated by means of an impure atmosphere, at all times and in all places, Dr Rush infers from the following facts:

1. It appears only in those climates and seasons of the year in which heat, acting upon moist animal and vegetable matters, fills the air with their putrid exhalations.

2. It is unknown in places where a connexion is not perceptible between it and marshes, mill-ponds, docks, gutters, sinks, and other sources of noxious air.

3. It is destroyed, like its fraternal diseases, the common bilious and intermitting fevers, by means of long-continued and heavy rains.

4. It is completely destroyed by frost.

This malignant state of the air has been noted by all writers upon epidemics from Hippocrates down to the present day; and Dr Rush thinks it is to no purpose to say, its presence has not been detected by any chemical agents. The eudiometer has in vain been used to detect difference between the noxious air of

of marshes and the healthy atmosphere of the neighbouring mountains. These principles, according to Dr. Rush, explain several facts, in the history of this disease, that are inexplicable upon the principle of its specific contagion.

1. We learn the reason why, in some instances, the fever does not spread from a person who sickens or dies at sea, who had carried the seeds of it in his body from a sickly shore. It is because no febrile miasmata exists in the bodies of the rest of the crew to be excited into action by any peculiar smell from the disease, or by fear or fatigue, and because no morbid excretions are generated by the person who dies.

2. We learn the reason why the disease sometimes spreads through a whole ship's crew, apparently from one or more affected persons. It is either because they have been confined to small and close births by bad weather, or because the fever has been protracted to a typhus or chronic state, or because the bodies of the whole crew are impregnated with morbid miasmata, and thus predisposed to have the disease excited in the manner that has been mentioned.

3. From the facts that have been mentioned, we are taught to disbelieve the possibility of the disease being imported in the masts and sails of a ship, by a contagious matter secreted by a sailor who may have sickened or died on board her, on a passage from a West India island. The death, in most of the cases of contagion supposed to be imported in this way, occurs within a few days after the ship leaves her West India port, or within a few days after her arrival. In the former case, the disease is derived from West India miasmata; in the latter, it is derived either from the foul air of the hold of the ship, or of the dock or wharf to which the ship is moored.

Dr Rush also thinks, that

“ It is a good practice to measure the truth or error of opinions in science by the influence they are calculated to produce upon national, physical; and moral happiness.

A belief in the non-contagion of the yellow fever, and of its being incommunicable except in one of the five ways that have been mentioned, is calculated to produce the following good effects:

1. It will deliver the states which have sea-ports from four-fifths of the expenses of their present quarantine laws and lazarettoes. A very small apparatus in laws and officers would be sufficient to prevent the landing of persons affected by the ship fever in our cities, and the more dangerous practice of ships pouring streams of pestilential air from their holds upon the citizens who live near our docks and wharfs.

2. It will deliver our merchants from the losses incurred by the delays of their ships by long and unnecessary quarantines. It will, moreover,

moreover, tend to procure the immediate admission of our ships into foreign ports, by removing that belief in the contagious nature of the yellow fever, which originated in our country, and which has been spread by the public acts of our Legislatures and Boards of Health throughout the globe.

3. It will deliver our citizens from the danger to which they are exposed by spending the time of the quarantine on board of vessels in the neighbourhood of the marshes, which form the shores of the rivers or coasts of quarantine roads. This danger is much increased by idleness, and by the vexation which is excited by sailors and passengers being detained unnecessarily fifteen or twenty days from their business and friends.

4. It will lead us to a speedy removal of all the excretions, and a constant ventilation of the rooms of patients in the yellow fever, and thereby to prevent the accumulation and further putrefaction of those exhalations which may produce it.

5. It is calculated to prevent the desertion of persons in the yellow fever by their friends and families, and to produce caution in them to prevent the excitement of the disease in their own bodies by means of low diet and gentle physic, proportioned to the impurity of the air, and to the anxiety and fatigue to which they are exposed in attending the sick.

6. It will put an end to the cruel practice of quieting the groundless fears of a whole neighbourhood, by removing the poor who are affected by the fever from their houses, and conveying them, half dead with disease and terror, to a solitary or crowded hospital.

7. By deriving the fever from our own climate and atmosphere, we shall be able to foresee its approach in the increased violence of common diseases, in the morbid state of vegetation, in the course of the winds, in the diseases of certain brute animals, and in the increase of common, or the appearance of uncommon insects.

8. A belief in the non-contagion of the yellow fever, and its general prevalence from putrid animal and vegetable matters *only*, is calculated to lead us to drain or cover marshy grounds, and to remove from our cities all the sources of impure air, whether they exist in holds of ships, in docks, gutters, and common sewers, or in privies, gardens, yards, and cellars, more especially during the existence of the signs of a malignant constitution of the air mentioned under the preceding head. By these means, I believe (the assertion is not too bold a one), the yellow fever might be as effectually annihilated as the small-pox will probably soon be by vaccination. A fever, the same in its causes and similar to it in many of its symptoms, that is, the plague, has been extirpated by extraordinary degrees of cleanliness from the cities of Holland, Great Britain, and several other parts of Europe.

You will perceive, from the facts and reasonings contained in this letter, that I have relinquished the opinion published in my account of the yellow fever in the years 1793, 1794, and 1797, respecting its contagious nature. I was misled by Dr Lining, and several West
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India writers, in ascribing a much greater extent to the excreted matters in producing the disease than I have since discovered to be correct. You will perceive, likewise, that I have changed my opinion respecting the manner in which the plague is propagated. I once believed, upon the authorities of travellers, physicians, and schools of medicine, that it was a highly contagious disease, generated chiefly by miasmata from living but diseased bodies. I am now satisfied this is not the case. It is the offspring, like the yellow fever, of exhalations from putrid vegetable and animal matters; but from the greater number of people who are depressed and debilitated by poverty and famine, and who live in small and filthy huts * in the cities of the Ottoman Empire, than in the cities of the United States, I believe it to be more frequently communicated from an intercourse with sick people by the morbid excretions of the body, than the yellow fever is in our country. For my change of opinion upon this subject, I am indebted to Dr Caldwell's and Mr Webster's publications upon Pestilential Diseases, and to the travels of Mariti and Sonini into Syria and Egypt. I reject, of course, with the contagious quality of the plague, the idea of its ever being imported into any country so as to become epidemic, by means of a knife-case, a piece of cotton, or a bale of silks, with the same decision that I do all the improbable and contradictory reports of an epidemic yellow fever being imported in a sailor's jacket, or in the timbers and sails of a ship that had been washed by the salt water, and fanned by the pure air of the ocean, for several weeks on her passage from the West Indies to the United States."

It may appear presumptuous in us, who have never seen an example of the disease in question, to dispute opinions which have been the result of too much experience; but in perusing the various documents with which we are supplied by the anti-contagionists themselves, we think we perceive strong evidence of the fallacy of their opinion, if the whole be not a dispute about words. In the first place, we may observe, that it seems to have been originally considered as contagious by the most accurate observers of the disease. Thus Dr John Mitchill, whose description of this fever, as it appeared in Virginia in 1741 and 1742, has been published in the Philadelphia Medical Museum, defines it to be "a pestilential fever, proceeding from a contagious *miasma sui generis*;" on which the editor, Dr Coxe, takes occasion to remark, that "it is to be remembered that this was written when *no doubt was entertained of the contagion of yellow fever*." In autumn 1797, when the Governor of Pennsylvania consulted the physicians of Philadelphia on the measures to be pursued

* M. Savary, in his travels, says, two hundred persons live in Cairo within a compass that accommodates but thirty persons in Paris.

performed to purify the city from any latent infection, and on the precautions best calculated to guard against the future occurrence of a similar calamity, Dr Rush, and twelve other physicians who adhered to him, among other particulars, stated, that, "5th, The common bilious and yellow fevers are alike contagious, under certain circumstances of the weather, and of predisposition in the body. That the common bilious fever is contagious, we assert from the observations of some of us, and from the authority of many physicians who had long commanded the highest respect in medicine." By noticing this change of opinion in Dr Rush, which indeed he candidly confesses, we do not mean to accuse him of inconsistency, but merely to show that the circumstances attending the communication of yellow fever are such that, even to men whose judgment and opportunities for observation the anti-contagionists cannot doubt, they naturally suggested the idea of its being contagious.

But, before adducing any arguments for the contagious nature of yellow fever, it will be necessary to define what we mean by contagion. All diseases which have the power of propagating themselves, under certain circumstances, from the diseased to the healthy, we include in the class of contagious diseases, whether they are communicable only by a specific matter, as small-pox, measles, cow-pock, and lues, or are also generated by other causes, as typhus; whether they affect the same person only once, as small-pox, or repeatedly, as lues; whether the matter, which appears to be the immediate means of propagation, be considered as an excretion or secretion; whether it acts only when applied in substance, as in cow-pock, or through the medium of the atmosphere, as in chin-cough, or in both ways, as in small-pox; whether it be visible, as in cow-pock and small-pox, or invisible, as in chin-cough and measles; and whatever its nature and chemical composition may be, whether acid, alkaline, or neither; whether contagion be considered as a property common to several kinds of matter, or a peculiar principle, capable of imparting that property to these kinds of matter. According to this idea, the contagious nature of any disease is a mere matter of observation, unconnected with obscure inquiries, and involving no speculative opinions. If these principles be admitted, Dr Rush himself has furnished us with abundant proofs of the contagious nature of yellow fever. He tells us that it has been propagated by attendance on a patient in a small, filthy, and close room in the country, remote from the place where it originated, as well as from every external source of putrid exhalations; but this strong fact he attempts to explain away, by asserting that the excretions of the body thus accumulated

malated undergo an additional putrefactive process, and acquire the same properties as those putrid animal matters which are known to produce malignant fevers. But of this additional putrefaction there is no proof; and all the other putrefying matters, in these small, filthy, close rooms, did not produce the disease, until a patient affected with it was lodged in them. The evident conclusion from this fact is, that the disease is contagious, but that, like other poisons, it requires a certain degree of concentration to produce its effect. Dr Rush allows that it was once received in Philadelphia from the effluvia of a chest of unwashed clothes, which had belonged to a citizen who had died of it in Barbadoes: a similar account of its introduction into an elevated and healthy situation near Portland is stated in the 26th page of the same volume by a decided anti-contagionist. These facts are also ascribed to putrefaction, but without any probability. The quantity of sweat, or other excretions, could not possibly be so great as to induce such effects by their putrefaction; nay, we doubt that they were capable of the putrefactive process. To us they appear instances not only of contagion, but of imported contagion. Dr Rush allows that yellow fever becomes contagious when protracted to such a period as to dispose it to assume the symptoms, and to generate the peculiar and highly volatilized exhalation from the pores of the skin, which takes place in jail fever. He allows that yellow fever may be excited by the exhalation from the excretions of a patient in that disease, acting as an exciting cause in persons previously impregnated with marsh, or other external miasmata; in other words, in a body predisposed to be affected by the contagion of yellow fever, it will produce that disease. Our readers must now suspect that the anti-contagionists understand contagion in a much more limited sense than we do; and such is the fact. They attempt to distinguish contagion from infection; but the distinctive characters being taken from circumstances which we have as yet no means of ascertaining, any arrangement of diseases on these principles must be entirely hypothetical. To enable our readers, however, to judge for themselves, we have selected the following remarks on Dr Haygarth's doubts, whether typhous fevers are *always* produced by specific contagion; and whether they are not also engendered in close, dirty, crowded rooms, by peculiarities of season, and the like.

“Herein Dr Haygarth is undoubtedly mistaken. And the error is natural enough to persons of but an ordinary share of discriminating power. To such the words *contagion* and *infection* appear to be perfectly synonymous. By such, *dirt* and *nausea* are employed as convertible

vertible terms : and to such there is no distinguishable difference between a poison *produced by morbid animal secretion*, as that of small-pox, and one engendered by mere *chemical action in certain forms of inanimate matter*, as that of typhus. But by a mind accustomed to note the diversified phenomena of nature, that *vitiating product of living vascular action*, which can excite in a well person a disease like that by which itself was produced, and continue indefinitely to do so after being transferred from one body to another, will be denominated **CONTAGION** ; and lues, vaccinia, measles, and small-pox, will be considered as examples of it. On the other hand, that *venomous offspring of putrefaction* going on in some of the kinds of organic matter, *after death or separation from the living frame*, which disorders the healthy functions without being specifically communicable, and without the power of communicating itself, will be called **INFECTION** ; and typhus, dysentery, plague, and yellow fever, will be given as instances. By a mind of this correct constitution, "dirty" will be understood to mean the collection of such *mineral substances* as constitute the upper strata of the earth, clay, sand, dust, &c. in the human body, in its clothing, or habitation. "Nasty," on the contrary, will be employed to express that condition of body, dress, bedding, house, and furniture, *induced by those animal excretions and excrements* which constantly exude from the pores and ducts, and taint and envenom the substances to which they attach themselves. A mason's frock is a *dirty* thing ; a beggar's blanket a *nasty* one. A house may be *dirty*, that is, it may have sand strewed about the floor, dust resting upon the furniture, ashes sprinkled over the hearth, and pieces of broken plaster scattered along the stairs ; and yet this house may not be unhealthy : but where a habitation is *nasty*, and the beds and bedding are saturated with urinous and perspiratory discharges, the floors besmeared with feces and bronchial phlegm, and every thing porous and bibulous charged with something convertible to stench and venom, the inhabitants must possess hardy constitutions indeed, if they can withstand this combination, this confederation of mischievous powers.

It is from *nauseous* degenerating to *infection*, by chemical changes among its particles, that the bodies, clothes, beds, and apartments of the poor in Great Britain derive their poisonous, their pestilential charge. In the books of physic, and in the lectures of its professors, it has been fashionable to call this virus *human contagion*, and its exhalations *human miasmata*. As well might the contents of a jakes be called "contagion," or the reekings of a dunghill "*miasmata*." It is a poison formed by intestine workings among the elementary ingredients of excreted and inanimate matter, and as distinct from the vascular energy by which contagion is elaborated, as death is from life. There is not an atom of contagion in the case ; for contagion, like other secreted fluids, is not imitable by any *artificial* process, and cannot, any more than bile or semen, be prepared in a laboratory by synthesis. By a common putrefactive process, this **SEPTIC VENOM**

is formed, and derives none of its qualities from pulsating arteries or glands. Away, then, with this preposterous phrase from the poison engendered by *septic processes*, and let "human contagion," for the future, mean nothing but small-pox, vaccinia, and the kindred forms of *morbid secretions*.—It is high time that the products of putrefaction should be distinguished from those of secretion."—*Med. Rep.* vol. v. p. 185.

But these observations are much more specious than solid. The distinction, so far as it is founded on the difference of secretions and excretions, is nugatory. There is no excretion which does not derive many of its qualities from pulsating arteries or glands. They are all either elaborated by vascular energy, or largely mixed with true secretions. If putrefaction be essential to infection, and incompatible with contagion, it still remains to be proved that the excreted matters are incapable of exciting the disease, except in the state of putrefaction. What evidence is offered, that the effluvia of the body, in yellow fever, excite disease only in consequence of becoming putrid, while, in scarlatina anginosa, they always act before they are decomposed? The products of putrefaction are nearly the same in all cases; their action should therefore be proportioned to their quantity: yet we will venture to assert, that the whole animal excretions adhering to the filthiest set of clothes a yellow fever patient ever wore, would bear no proportion to the common putrefying matter, to whose action every individual, in whom they excited disease, had been repeatedly exposed with impunity.

We shall offer at present no remarks on the "certain noxious qualities in the atmosphere," to which Dr Rush is compelled to resort to account for the effects of contagion. It is too vague an hypothesis, to admit of refutation, and we shall take some future opportunity of examining the septic theory of Dr Mitchell.

We cannot, however, conclude these observations without condemning, in the strongest manner, some of the last set of arguments used by Dr Rush, in opposition to the doctrine of contagion. They amount simply to this; by believing yellow fever, or any other disease, to be not contagious, we shall spare ourselves the trouble of taking any precautions against its spreading by contagion: it will spare our state the expense of quarantine establishments: it will be highly advantageous to our merchants, and convenient to our sailors. As well might he argue, that it would be convenient to believe that fire does not burn, or water does not drown. It is undoubtedly proper to point out the influence which any truth may have on the happiness of mankind, and to expose the dangers of any error; but it is a very unfair and dangerous conduct to appeal to the passions of men, and to state forcibly the advantages which would result from
any

any opinion, if it were true, without, at the same time, warning them of the mischievous consequences which may result from it, should it be false. Could any degree of freedom in commercial intercourse compensate for the valuable lives which were lately lost at Gibraltar, in consequence of the doubt or disbelief at first entertained of the contagious nature of the disease, which almost depopulated that important fortress.

IV.

Observations on Cancer, connected with Histories of the Disease. By EVERARD HOME, Esq. F. R. S. Surgeon to St George's Hospital. 8vo, London, 1805.

THIS work is sufficiently recommended to public attention by the very interesting nature of its subject, and by the name of its author. To the observations of Mr Home we are glad to find some cases and remarks added from the note-book of Mr John Hunter. It is not necessary to point out the value of any remarks from such a source. Mr Home acknowledges, with becoming modesty and respect, his obligations to the hints derived, both in writing and in conversation, from his celebrated relation, and he merely claims the merit of combining the result of his own observations with those suggested by this very accurate observer. The obligation is therefore twofold, and the claims for approbation are extended in proportion to the celebrity of these two practitioners. The object of this publication is stated to be a desire of assisting in the discovery of the nature of cancer, and of the most effectual means to be adopted for its prevention and its cure. To accomplish these desirable ends, Mr Home considers it the most rational mode for every practitioner, who has had considerable opportunities for contemplating the disease under its different circumstances, to lay before the public the facts he has collected, and the observations made upon them. A fund of accurate observations, it is said, will thus be formed; but is there not a vast fund of facts on this subject already accumulated? What shall we call the numerous collection of cases, cures, observations, practical hints, and remarks, now upon record? Cancer is a disease which has been known and described many centuries past; its history and its ungovernable virulence appear the same now to us as they did to the older surgeons; we can trace its progress, and point out the inefficacy of the curative means employed

ployed; but something more is now required; some analytical method must be applied, and some comparison instituted, otherwise we are lost amidst the multitude of insulated facts, and lose all the advantages of legitimate induction. Science has been not unaptly compared to an inquisitive traveller, whose baggage increases as he goes along, by his collecting every object which strikes his attention in his route, till at length he finds himself obliged to examine his trunk, either to get rid of worthless specimens, or to arrange them in better order, that they may be made to occupy less space, be more easily carried, and be more readily brought out for use. Medicine, including under that title all the branches of the healing art, abounds with heavy luggage and superfluous baggage; almost every traveller in this road seems to have thought himself duly qualified to become a collector, and thus many a specimen has been picked up, without its value or its nature being known, and the characters which are given are sometimes so amorphous, that it is no easy task to detect its proper place in a well-arranged cabinet, even if the description be not so adorned as to set all scientific systematics at defiance. No where is this rummaging spirit of philosophy more required than in what has been written upon cancer and carcinomatous tumours. A vast body of evidence is scattered about, and many valuable histories remain to be collected and put in order; much that is both foreign and useless might be removed, and simplicity and scientific precision might be made to supersede quackery and confusion. This remark is intended to be general, and by no means more applicable to the present work than to others of a similar nature. If Mr Home had pointed out where his experience led him to agree and where to differ from authors of established reputation on this subject, besides giving his own observations, our knowledge would appear at least to make some progress; the experience of past ages would be made subservient to our own, and we should not be talking about a new discovery, when we ought to be investigating the nature of an obscure and confirmed truth. In this respect his book is defective; he animadverts, however, with great justice, upon the too frequent practice of regular surgeons abandoning what are deemed incurable diseases to quacks and pretenders, who find means to console their credulous patients by promises, which are more grateful than frigid indifference or total neglect.

These 'observations' are divided into eleven chapters, eight of which are filled with the histories of cases of cancer in different parts of the body. Some of these examples afford room for difference of opinion with regard to the inferences deduced from them by the ingenious author; some are highly instructive, and

others might, perhaps, have been omitted altogether, without any disparagement to the practical utility of the work. The following are the principal practical hints which may be collected from the detail of these cases. Tumours in the breast will sometimes become cancerous, after remaining long indolent and stationary; external violence lays the foundation of a cancerous disease, and increases its progress when it has already begun; the disease varies in its appearance according to the part it attacks; the pain is sometimes occasioned by the pressure of the tumour against a principal nerve; the external application of arsenic will sometimes produce pains in the bowels, diarrhoea, and rigor; and the same symptoms are excited by applying corrosive sublimate to a tumour; the progress of cancer is sometimes accelerated by an operation; the symptoms and appearance of cancerous tumours are sometimes owing to hydatids, though these are to be considered as accidental or superadded to the more formidable disease; and, lastly, patients labouring under cancer of the rectum, have experienced the greatest relief from a pill composed of one, two, or three grains of extract of opium, introduced upon the end of a bougie into the rectum and allowed to remain there.

In the ninth chapter, the author proceeds to give some observations on the nature and progress of cancer; he explains his motives in a very candid manner:

“In stating these observations, I wish it to be understood, that I am communicating all the material information I have been able to collect upon this important subject; and not meaning that it should all be considered as my own. Much, certainly, originated with Mr Hunter; perhaps the greatest part; for I am conscious that we are too apt to consider those opinions that have long been known to us, and have been often revolved in our minds, as the creatures of our own brain, although, in fact, they are only adoptions, to which we have given some change of dress, and are led to believe, by doing so, we have made them entirely our own.

“The general principles here stated, both with respect to the contamination of the disease, and the different effects of caustic applications, I certainly received from Mr Hunter. The idea of common indolent tumours becoming cancerous was not his, since a case of that kind, which occurred, of such tumours being met with in the breast, seemed to be new to him, and the diseased part was preserved as a specimen of that fact. So far, indeed, have I been from adopting such an idea, from any source whatever, that, within these three years, I gave it as my opinion that the case was not likely to happen, and continued to hold the same opinion till the two cases, mentioned in the beginning of this work, placed the subject of such cases of cancer

cancer in a new point of view, and induced me to put together the materials which are here produced.

"As cancer is a term too indiscriminately applied to many local diseases, for which we have no remedy, though they differ very much among themselves, it becomes necessary to state what the complaints are which I include under this denomination.

"The present observations respecting cancer apply only to those diseased appearances which are capable of contaminating other parts, either by direct communication, or through the medium of the absorbents; and when they approach the skin, produce in it small tumours of their own nature, by a mode of contamination with which we are at present unacquainted.

"There is a disease by which parts of a glandular structure are very frequently attacked, particularly the os tincæ, the alæ of the nose, the lips, and the glans penis. This has been called cancer, but differs from the species of which we are now treating, in not contaminating the neighbouring parts with which it is in contact; and neither affecting the absorbent glands, nor the skin, at a distance from it. It is, properly speaking, an eating sore, which is uniformly progressive; whereas, in cancer, after the sore has made some progress, a ridge is formed upon the margin, and the ulceration no longer takes that direction. It also differs from cancer, in admitting of a cure in many instances, and under different modes of treatment.

"From the facts that have been stated in the preceding cases, it appears that cancer is a disease, which is local in its origin. In this respect, the cases here given only confirm an opinion very generally received among medical practitioners, but in favour of which no series of facts had been laid before the public, of sufficient force entirely to establish the position.

"This point I shall therefore assume as ascertained, and, proceeding one step further, shall endeavour to establish a second point, which is, that cancer is not a disease which immediately takes place in a healthy part of the body, but one for the production of which it is necessary that the part should have undergone some previous change, connected with disease.

"In proof of this, I need only adduce the two first cases in the present volume, as they appear to me the most clearly made out of any that I have seen; and having such grounds to set out with, this opinion becomes very materially strengthened by the innumerable instances which occur in practice, of a pimple, small tumour, or wart upon the nose, cheek, or prepuce, remaining for ten, fifteen, twenty, or thirty years, without producing the smallest inconvenience; but, at the age of 60 or 70, upon being cut in shaving, bruised by any accidental violence, or otherwise injured, taking a cancerous disposition.

"All the cases of induration of the gland of the breast, or of indolent tumours in it, which have continued for years, without producing any symptoms, and, after being irritated by accidental violence,

have assumed a new disposition, and become cancerous, admit of the same explanation, and may be considered as so many proofs of the truth of this latter position."

The two conclusions here so distinctly and decidedly stated are of great importance, viz. 1. That cancer is local in its origin; and, 2. That some alteration takes place in the structure of a part preceding that morbid affection strictly called *cancer*. These are two points of the greatest moment, and, if well founded, must have considerable influence on the line of conduct to be followed in the treatment. They are points, however, which must not be assumed unless after a very full induction of facts. The cases adduced by Mr Home, and the reasoning he employs, are highly interesting, and well deserving the most serious attention, but a greater number of instances are required, a more enlarged experience is necessary, to set these questions which have been so long agitated, at rest for ever. It is admitted, that some previous change must take place in the part before cancer attacks it, that the part must become diseased in a less degree; now this pre-disposition may be either general or local. When a scrofulous tumour occurs in any part of the body, we blame the whole constitution, when a chancre is produced, the system is only secondarily affected by it. The whole system is deranged in some cases of cancer; is this affection primary or secondary? Cancerous diseases are of a peculiar character; their symptoms and their termination are extraordinary, and peculiar to themselves; they occur most frequently in elderly subjects, in women, especially about the period of the cessation of the menses, in which the constitution generally undergoes remarkable and important changes. If it be proved that some cancerous diseases are local in their origin, it will not necessarily follow that all must be so. The chimney-sweeper's cancer, in all probability, is local, the melancholy consequences of his dirty occupation. We regret much that Mr Home has made no allusion to this singular species of the malady, which has so deservedly engaged his inquiries.

The two remaining chapters contain many valuable remarks on the advantages and disadvantages attending the different modes employed for extirpating cancer, and on the particular mode of operating with the knife. Extirpation by the knife is strongly advised in preference to the use of caustic; this latter mode is condemned, and the bad effects of it are well pointed out and corroborated by its consequences, exemplified in the treatment of chancres. The caustic application employed by Mr Home consists of equal parts of the white arsenic and sulphur; this is very powerful, and answers the purpose of destroying any tumour which

which has not acquired the disposition to throw out fungus. The actual cautery is recommended as the least painful and most effectual mode of restraining the growth of fungous excrescence; one instance is mentioned in which it was used with advantage. For many other useful observations, we must refer to the book itself, which, although it contains little with which experienced practitioners are not already acquainted, either from observation or reading, deserves to be perused and examined by every one anxious to settle his doubts with regard to some important parts of the treatment of this disease. Mr Home has done what we earnestly hope others will do; but, at the same time, we must express a wish that all writers on this difficult subject would compare the result of their own experience with that of others; time will thus be saved, and error avoided. Since we began to turn our thoughts again to this subject, in consequence of reading this book, we have been fortunate in meeting with some remarks attached to a series of excellent questions concerning the nature and the cure of cancer. Our task of reviewing has been considerably abridged by the judicious and comprehensive manner in which these questions are expressed and explained. To many of our readers they may be still, as they were till lately to us, unknown; we cannot, therefore, perform our office better, than by giving them an early place in our Journal; while, at the same time, we express our obligations to Mr Home for his able reply to some of the queries which will be found in the Address from the Medical Committee of a laudable Institution.

V.

The Works of Dr John Brown; to which is prefixed, a Biographical Account of the Author. By WILLIAM CULLEN BROWN, M. D. late one of the Presidents of the Royal Medical Society of Edinburgh. 3 vols. 8vo. London. 1804.

FIVE-and-twenty years have now elapsed since the publication of the first edition of the *Elementa Medicinæ*, a work intended by the author to exhibit the outlines of a system for some years taught at Edinburgh, and which, it was fondly imagined, was to effectuate a complete revolution in the principles, as well as in the practice, of medicine.

The flame which this system kindled, the passionate opposition

it had to encounter, the feuds to which it gave rise, are now only remembered. Like the author, these exist no more. Though his memory will live for ever, these we would wish to forget. The first effervescence occasioned by the novelty of the Brunonian doctrine has subsided at least in this country; our school is no longer agitated by the Cullenian and Brunonian factions; a more cool and dispassionate spirit of inquiry has taken place of that keen contention which some of our readers may remember; the most perfect freedom reigns amongst us, and the merits of adverse systems are now canvassed, not by hostile bands rallied under the banners of party, but by a congress of eclectics, aware of the imperfection of medical science, arduous, however, in the pursuit of truth, but who, conscious of the difficulties they have to encounter, of the complexness and intricacy of the subject, of their inadequate means, confess that the laws of vitality, imperfectly understood, do not yet admit of any general classification; that no system, no doctrine, has yet embraced the whole, and that the first step towards improvement is the detection of error and fallacy, wherever found.

In this temper, to which we have been long habituated, we took up the present edition of the works of Dr John Brown, confident, too, that we should not have to encounter an adverse disposition on the part of the editor. We were disappointed, therefore, when we found our judgment dogmatically silenced, at the very threshold, by the noisy echo of the perfectibility of the system. We excuse the natural fondness of a parent for his own offspring, of the founder of a sect for his own doctrine; but we do not feel the same indulgence for an obstinate and overbearing disciple. When a son becomes the biographer of his father, we acknowledge the difficulty and delicacy of the task, and are disposed to pardon much; we expect a higher colouring of some, and a softening down of other parts of the portrait, but, provided the resemblance is not altogether lost, we easily forgive a partiality so natural and so amiable.

Such is the life of Dr Brown, prefixed to the present edition of his works. But we should extend too far our forbearance, were we to pass, altogether unnoticed, the terms of arrogant exaggeration in which the editor speaks of the Brunonian system; for, on this subject, every one should be allowed to judge for himself. Even those who implicitly adopt all the tenets of the new doctrine will recollect, perhaps, that "good wine needs no bush;" and those who have found reason to question its principles will be surprised, or offended perhaps, when told that every proposition of the doctrine is supported by reasoning so forcible and conclusive, that, while it bids defiance to refutation,

tion, it scarcely requires the aid of illustration. But let these see to themselves; if they wish to be considered men of talent, candour, and learning, they must turn Brunonians. For such are the compliments bestowed on the patrons of the system by our editor, while all those who held out against the new light are as liberally censured for their ignorance, illiberality, and petulance. But the number of the ignorant, of the illiberal, and petulant, is gradually, it would seem, diminishing; for, if we are to give credit to the editor, the triumph of his father's doctrine has been at length complete. In spite of the most illiberal and persevering opposition, in spite of faction, persecution, and inquisitorial authority, it has, we are told, found its way into every part of the world where literature and science prevail. Every where, but especially on the continent, it has gained numerous proselytes and warm friends.

Thus successful under the most disadvantageous circumstances, "what," it is asked, "would have been the consequence, had its discoverer, instead of being a poor, unfriended, and persecuted philosopher, with his splendid abilities united the adventitious circumstance of being placed in one of the professorial chairs of the flourishing university of Edinburgh?"

"Instead of being left, solely recommended by its own merit, to stem the torrent of opposition, and slowly push itself forward through the hosts of enemies leagued against it, the Brunonian system, countenanced by the great, would have been at once firmly established in the medical school of Edinburgh. It would have been received there by the students with implicit faith; and from thence have been rapidly diffused wherever the English language prevails. The continent would have next caught the flame, and the new light would have speedily illumined the different countries of Europe, and occasioned in them a revolution in medicine as extensive as radical. Instead of the inventor being allowed, during his life, to languish in penury, honours and dignities would have been heaped upon him; and, after his death, statues would have been erected to him, in grateful remembrance of the inestimable benefits he had rendered humanity."

But though justice has not been done to his merits in his native country, abroad, where the reception of his doctrine did not in an equal degree affect the interests and pride of individuals, his system has experienced a very different fate. The trite, though very just maxim, "that a prophet is not honoured in his own country," has been fully verified by the persecution he sustained."

Ὁὐκ ἔστιν τὸ ἄνθρωπος ἰδιὸς; Are we indeed such stuff as dreams are made of, and is our little life rounded with a sleep?

We cannot otherwise forget, that to this very opposition, to these

these same adverse circumstances, the Brunonian doctrine owed much of its early celebrity at home, and rapid progress abroad.

We remember the crowds of Brunonians who walked our schools, and thundered in our societies, in times when mutual intolerance characterized the adverse sects; but now, that a more liberal spirit prevails, that opposition is heard no more, that the name and authority of Brown is quoted by the pupil without fear, and drops with respect even from our professorial chairs, we hardly meet with a true and staunch Brunonian, one who defends the whole theory and practice of his master, or who thinks that nothing can be retrenched, 'nothing added to his doctrine. The few, indeed, who choose to style themselves Brunonians are so after their own way; for, let us not be deceived, those are not all Brunonians who adopt the phraseology of the system. Scarcely do we meet with two who agree in their creed; not one, not even the editor of the volumes now before us, who submits implicitly to the authority of the oracle. If any one should doubt the truth of this assertion, let him consult the note at the bottom of page 186 of the introduction.

Brown had made no provision in his system for the recovery of exhausted excitability, which, indeed, would have been perfectly inconsistent with the fundamental principle of his doctrine, that a determined portion of excitability is assigned to every individual at the commencement of its existence. But our editor and the later Brunonians have taken warning, and have made provision for the daily repair of excitability, for the repair of that of which a determined portion only is, at the commencement of existence, assigned every individual, and which is continually consuming by the operation of stimuli. It is doubtful whether this improvement could be acknowledged by Brown; it is certainly nowhere to be discovered in his writings: but to this point we shall return hereafter.

The progress and success of the new doctrine has been every where the same. The novelty of the system, and its apparent simplicity, gained friends, whose zeal and ardour were increased by the intemperance of opposition. But abroad, as at home, the new light was gradually extinguished. This we know to have been the case in France and Italy; and we even doubt that in Germany, Brunonians are still to be found such as Brown himself, were he alive, might acknowledge. But, in general, though the enthusiastic admiration which the *Elementa Medicinæ* kindled in certain minds, in every country, on their first promulgation, has greatly cooled, the new doctrine, as it has been emphatically called, has, it must be confessed, every where left traces of its first impression. It may be said to have given the death-blow to the humoral pathology, to
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have excited a chaster spirit of pathological inquiry, and to have introduced a new and more correct language into medicine. It has been the misfortune of this important science seldom to have been cultivated in a chaste and philosophical manner. Vain speculations and fanciful hypotheses have obstructed all more rational inquiry; or the other sciences have each in turn been preposterously pressed into the service, with what success need not be told to those acquainted with the metaphysical, mechanical, and chemical theories of the last and preceding centuries. We seem now, indeed, more prudently disposed to regard the powers of muscular motion and of sensation as ultimate facts in physiology, and to confine ourselves, by observation and experiment, to the investigation of their laws, and conditions of action.

The first attempt to generalize these laws we owe to Brown: He saw the error of preceding physiologists, yet he himself knew not where to stop: instead of steadily groping his way, and advancing by slow and sure steps in the path he had discovered, he deviated as usual, and, misled by the common infatuation of system-makers, the vain hope of explaining every thing by a hasty and premature generalization of the first abstraction, he mistook, or wished others to mistake, the combinations of a creative imagination for the inductions of extensive and faithful observation. These, indeed, he rejected with supercilious contempt; and the experience of ages was sacrificed to the hypothetical dogmas of the new practice.

As few of our readers are unacquainted with the outlines of the Brunonian system, it would be superfluous here to offer any abstract or analysis of these volumes. A very few remarks, however, we shall take the liberty of making on the leading principles of this celebrated doctrine; on those, especially, to which the editor himself has directed our attention.

The first subject of animadversion, which naturally presents itself, is the fundamental proposition and ground-work of the whole system,—that a determinate portion of excitability is assigned to each individual at the commencement of existence. That this determinate portion should be acted upon by stimuli, gradually wasted by their regular operation, or suddenly exhausted by the inordinate action of the more energetic, is intelligible enough, and perfectly congruous to the theory; but that this excitability, whose quantum is originally so exactly proportioned and so nicely determined for each individual, should, after being consumed, ever again accumulate by any interruption in the application of those stimuli, is neither clear, intelligible, nor consistent. Upon the principle, indeed, thus gratuitously assumed, the excitability might be economized, but never could be increased,

creased, never made to accumulate above what remained at the time any proportion of stimulus was withdrawn : though something might be saved, nothing could be gained by the abstraction of stimuli ; and on the reapplication of the discontinued stimuli, or of others, the excitability should never be found increased or accumulated, but should be stationary at the point of interruption, or, more correctly, in every possible case, should be found somewhat wasted, though less than it otherwise might have been, inasmuch as it must, in the interval, have been acted upon, and consequently consumed more or less by the other continued stimuli, in proportion to their number and power. On the other hand, every additional, unusual, and violent stimulation should, upon the same principle, rapidly waste and hasten the irrecoverable exhaustion of the powers of life. The proposition, then, that a determinate portion of excitability is assigned to every individual, being equally inconsistent with the subsequent theorems of the system, and with matter of fact, must be given up, or explained away somehow. This the later, or pseudo-Brunonians, have attempted ; or they have yielded the point so far as to admit that the wasted excitability may, by rest and food, be partially renewed, "though it does not entirely regain the point where the exhaustion had commenced." This concession, however awkwardly and sparingly made, is, in truth, an acknowledgment of oversight in that brilliant system which challenges all reproof, and by no means a refutation of the critique of Hufeland, who had before pointed out the inconsistency of this principle. But, farther, according to the hypothesis of Brown, even with the pittance of common sense annexed to it, like an explanatory codicil by our editor and others, we do not perceive how a case of direct debility can ever recover. For if, with whatever dexterity we manage the whole range of stimuli, the savings of excitability can never be made to accumulate so as "to regain the point where the exhaustion commenced," the system, it is evident, must still remain in a state of exhausted excitability, and indirect debility. To borrow an illustration from the Brunonians themselves, let the case be that of an individual whose excitability is 10 degrees, and corresponding excitement, according to the fanciful arithmetic of the system, 70 degrees, which is the middle point between extreme asthenic with indirect debility, and high sthenic disease, and which, if any thing is intelligible in this curious scale, must be a point of health, being at an equal distance from sthenic and asthenic disease ; and let this individual, so critically balanced, be farther stimulated by wine or opium, till 5° more of excitability are consumed, he will then be in a state of extreme asthenia and indirect

rect debility, from which, if we are to believe Dr William Cullen Brown, he never can be recovered. We may reduce the stimuli as we please, all at once or gradually, or change them in every possible way, the excitability never will accumulate "to the point where the exhaustion commenced;" or, in the present case, it never will arrive at 10 degrees, the point in question; nor can the patient be delivered from the indirect debility into which he has fallen, nor from diseases of extreme asthenia, with some one of the formidable catalogue of which he must for ever after be afflicted, while one spark of excitability remains. Take now a more practical case, which we are every day accustomed to see. Let this be an ordinary drunken paroxysm, where the exhaustion is often carried to a very great length, so as nearly to approach the zero of the Brunonian biometer, and observe how complete the recovery, how soon the individual is again upon his legs, restored to all his powers and wonted health, how speedily and entirely the excitability is renewed; and you will acknowledge that his existence has not depended on any limited allotment of excitability assigned to him at the first moment of life, which otherwise must have been completely and irrecoverably exhausted by the very first error of this kind. Consider, again, the long and vigorous life of many addicted to excessive stimulation, and you will agree that excitability, while the organization remains, may be recruited to almost any extent. Indeed, never, in our apprehension, was any thing more inconceivable than the most familiar example of indirect debility, on the Brunonian hypothesis. "Inconceivable," says our editor, "inconceivable indeed it is, that in indirect debility, whether great or not, the excitability may be restored by still stronger stimuli; but whoever, before Dr Hufeland, alleged that such an inconsistent principle formed any part of the Brunonian doctrine?" What follows, however, in the same note, and what forms part of the doctrine, is hardly less objectionable and inconceivable: "Now, it is a law of the excitability, that when it is worn out to a certain extent, stronger stimuli than ordinary are necessary to produce the usual excitement. It is not proper, therefore, to have recourse to stronger stimuli than what occasioned the indirect debility; but the rule is, to employ a force of stimulus not much short of that which produced the high excitement." But whether the stimuli employed be stronger or weaker, of the same or of a different kind, short or not much short of those which induced the exhaustion, is of little consequence to the argument. The objection applies equally in every case. The excitability, by hypothesis, is exhausted to the degree of indirect debility, and never, according to the principles of the Brunonian, can be completely replaced; nor do we

we see how, consistently with those, it can be replaced at all. Stimuli, not much short of those which wasted the excitability, must be applied, and, however numerically managed, they must still act upon what remains, wear it out more and more, and at length completely exhaust the power. To this it is answered, "That the impression made by every stimulus is less the second than the first time, still less the third than the second time, and so forth, until it ceases to produce any farther excitement." The objection is surely neither obviated nor answered by this statement. When no further excitement can be produced by a certain force of stimulus, do you expect excitement from a less? If not, you do, by changing the stimulus. But, more properly, your intention is, in every such case, gradually to lower the excitement where it can still be produced; and, for this purpose, you continue to apply stimuli not much short of the original. Whatever stimuli are still employed act upon the excitability; acting upon the excitability, they must produce excitement; producing excitement, must they not wear out the excitability by consuming a part of what remained? And when, after one set of stimuli has ceased to produce the desired excitement, you have recourse to others, what do you expect from their action? By your own principles, if you are a sound Brunonian, excitement, still excitement, and farther waste of excitability. Nor is the argument altered in the case of a descending scale of stimulation. Either these remaining stimuli also act on the excitability, or they do not. If they do not, they are useless. If they do, then they must still consume it; and the exhaustion advances, though less rapidly than if the original and more powerful stimuli had been continued.

We repeat it, on the principles of Brown, if closely followed up, there is no possibility of an accumulation of excitability. It may be saved, but never can be increased beyond the point of its last exhaustion. It cannot be alleged that the excitability, though acted upon and still consumed, by a reduction of stimulus accumulates faster than it is wasted. For, according to the theory, every accession of stimulus from the very zero of the scale upwards to the degree, whatever that may be, at which you stop, or at which disease has commenced, has constantly and invariably exhausted more excitability than was supplied; to whatever degree, therefore, you return in descending, if the excitability be at all acted upon, the exhaustion must still exceed the supply.

We have reasoned all along according to the Brunonian hypotheses, that a determinate portion of excitability is assigned to every individual at the commencement of its living state; that it never
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is reproduced so quickly as it is exhausted by the operation of stimuli, or that it never can be made to accumulate so as to regain the point where the exhaustion commenced; and we have found that all these hypothetical propositions lead to conclusions at variance with observation, with truth, and, indeed, with the subsequent theorems of the system itself.

If, then, our reasonings have been just, if a foundation be laid in the organization of the system for a constant supply of vital power to meet the expenditure within certain limits, and regulated by the nature and energies of the various exciting forces, the whole theory of the progressive and invariable exhaustion of the excitability by these agents falls to the ground. We perceive, not only that excitability may be renovated by the assimilation of ordinary food, but that the operation of other agents, not limited to its simple excitement and exhaustion, may raise it, and increase the supply, so as to meet, and even to exceed, the waste. While other agents there may be, having the force to arrest the supply of excitability, or to diminish and destroy it by another operation than that of excitement and exhaustion. And all this, so far from involving an absurdity, seems more rational and consistent than to maintain that the excitability can only be acted on in one way, or that it has been exhausted by excessive stimulation, where no signs of excitement and action have been or can be shown.

This leads to the consideration of another general proposition of the Brunonian doctrine; that all the powers which act on the excitability are exciting or stimulant, differing one from another in degree only, but in their general operation perfectly alike. The agents thus sweepingly brought together are heat, diet, the blood, secreted fluids, air, sense, thought, passions, contagions, poisons, the whole *materia medica*, every thing: all of which are said to produce excitement, the expression adopted to designate their common effects on the excitability, which are "sense, motion, and mental action."

"Since," continues the author of this system, "since, of the same exciting powers, some act by evident impulses, and the identity of the effect of others infers the same mode of operation, and since they have all a certain activity in them, *they ought to be* denominated stimulant, or stimuli."

If this reasoning mean any thing, if it be at all intelligible, it may be applied with equal force to every case of causation whatever, and might as cogently serve to prove that the whole phenomena of the universe are the effects of stimulating powers, as that life is a forced state, and all its phenomena the effects of unvaried stimulation. Thus all causes act by impulses, or, in
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the opinion of most philosophers of the present times, by pressure; whatever varieties therefore we may observe in their effects, their mode of operation may be said to be the same. Again, all causes "have a certain degree of activity in them," and ought therefore "to be denominated stimulant, or stimuli." And this is the whole force of that memorable argument which Brown so loosely employs on every occasion; and in the general application of which we can perceive no other identity than is here stated.

It is very far from proving that the *only effect* of the acting powers is excitement, or even that this is the *common effect* of them all. "The common effect produced by the exciting powers is sense, motion, mental action, and the passions; which effect being one and the same, it must therefore be granted, that the operation of *all the powers* is also one and the same."—"The effect of the exciting powers acting upon the excitability is excitement." But do all invariably and indiscriminately produce excitement, sense, motion, mental action, and the passions; or are there some which produce sense rather than motion, others rather motion, or mental action, or passion? If the effects of all the powers be identical, if they indiscriminately produce all these changes, without any other variety than that of degree, it would be easy so to dose and proportion any one of them, as to produce the usual and common effects of any, or of all the others. If not, we must at once acknowledge a marked difference and characteristic agency in the various powers. Besides, it is allowed, almost universally, that some powers, instead of wasting the excitability in proportion to the excitement occasioned, do rather raise its force, or accelerate its accumulation. This effect the later Brunonians have openly attributed to food; and it is so true also of other stimuli, that the just expression of the fact has unguardedly escaped from Brown himself, though the sentence which we are going to quote, for the sake of the expression, becomes, from the concluding member, complete nonsense*.

"The waste of excitability first exhausted by stimuli, and then recruited by new ones, is most difficultly repaired." Indeed, though inconsistent with that fundamental proposition which we have already examined, it is perfectly true in fact, and admitted in the general structure of the Brunonian doctrine, that the excitability may be recruited; for how otherwise, when once exhausted, could it ever again accumulate?

Now, this renewal of the excitability must, we think, be admitted

* Brown himself acknowledges that he may write nonsense.—Vol. ii. note, p. 162.

mitted to depend on the changes produced in the system by the operation of some exciting powers ; for, if not, life would be no longer what Brown has chosen to call a forced state, since the most material of all the functions would thus be independently maintained. Agents, however, there must be, by the operation of which the excitability is supported and renewed. Food has been acknowledged to have this effect ; oxygen appears to have the same power ; others there may be constantly operating ; and even, perhaps, in the catalogue of the *materia medica*, similar agents may be found. If, of the powers which act on the living system, some constantly waste the excitability by previous excitement, and some operate by recruiting it, a presumption at least arises, that there may be others which retard the renewal of excitability, or which weaken it, without previous excitement. Such powers would not be devoid of activity ; they would be as real and efficient as those producing the highest excitement and greatest exhaustion. There is no absurdity in the supposition of such powers, whatever may have been said to the contrary ; they are conceivable, and have long been marked by the term *sedative*. Brown, it must be granted, has succeeded in showing that some agents, formerly thought to be sedatives, affected the system primarily as other stimulants, but he has not been equally successful in his attempt to prove that there does not exist any sedative power in nature. The force of his general argument we have already examined. It remains to call the attention of our readers to an example or two of its particular application. We shall have abundant proof of the perplexed views and unsteady conception with which he laboured to establish this favourite speculation.

It will scarcely be denied, that there are powers which destroy life and excitability without previous excitement, or at least without any of its acknowledged signs being discoverable. An example, to which it will be difficult to make any objection, is afforded in the effects produced by the respiration of some of the noxious gases. The animal which inspires pure hydrocarbonate is killed, not, however, from want of oxygen, not from suspension of natural respiration, because this function may be interrupted for a much longer time without occasioning death ; nor from excessive stimulation, because the animal dies without any sign whatever of previous excitement. Sense, motion, and all the other faculties of life, are instantly destroyed ; and the irritability of the muscles of an animal so killed is found to be extremely low. If diluted hydrocarbonate be respired, the effects differ in degree only ; the forces of life are depressed ; sense and motion are impaired ; there is every mark of a diminished,
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but no sign of an increased excitement. Such a power has no title to be called stimulant. It is, strictly speaking, sedative. The effects of some other substances denominated poisons would lead to the conclusion that they also are sedative. They are immediately destructive of life, or they weaken action without any preceding excitement. Yet these also Brown classes with the usual exciting powers. Their operation, he observes, must be allowed to be the same, because they operate the same effect as the ordinary exciting powers. This, however, he has not even attempted to prove. What are the effects of the ordinary exciting powers? Sense, motion, and mental action, the phenomena of life. The effects of poisons are the contrary of all these; diminished excitement and death, without one preceding instant of increased action. The natural inference seems to be, that their mode of operation must be different from that of the ordinary exciting powers. Again, some passions of the mind are highly exciting, and others as evidently depressing. But as a direct sedative had no place in the system of Brown, the passions having this effect were sacrificed. They have no real or positive existence, we are told; they are considered as negations merely of the exciting passions; "fear and grief are only diminutions or lower degrees of confidence and joy." With equal propriety, however, it might be said, that joy is the absence of grief; or that confidence arises from the abstraction of fear. And indeed the cessation of grief is more commonly and more immediately followed by joy, than that of joy by grief. Thus the depressing passions, by the same sophism, might be maintained to be the only real ones, the exciting passions diminutions only of these. In truth, however, they are all affections of the mind, equally positive and independent. An exciting may succeed to a depressing passion, or the contrary, or either to a state of indifference. As hatred is opposed to love, or aversion to desire, so is grief to joy; but no one of these passions can be said with truth to be a diminution of, or any power or degree of its counter affection. Desire may cease without passing into aversion, and the absence of joy is very different from actual grief. No parallel, therefore, can be drawn between the effects of a depressing passion, and those which result from the abstraction of an exciting power.

With regard to contagions, when we consider the regular and progressive series of actions induced by these on the system; when we have observed that each contagion gives rise to a train of peculiar and characteristic phenomena, defining the disease whence the contagion itself originated, and terminating often in the formation and separation of a quantity of morbid matter
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alone capable of propagating the same disease in others, we cannot acknowledge that identity in the operation of the exciting powers which the Brunonians contend for. In diseases induced by contagions, in the small-pox for example, or in lues venerea, we perceive something more than simple excitement and unvaried stimulation. Individuals of every description, whether predisposed to sthenia or asthenia, whether labouring under direct or indirect debility, may be infected; and when the disease has taken place, it runs its course, under every possible modification of the excitability. So true is this of the small-pox, that it may begin in direct, and terminate in indirect debility, without any interruption in the course of the disease. It is sometimes a sthenic, sometimes an asthenic disease, but still the small-pox, with the same progressive series of changes, terminating in the secretion of matter capable of reproducing the same phenomena in others. Yet the same individual is once only in his life susceptible of this disease; nay, the very slight and almost imperceptible excitement or indisposition produced by the vaccine infection renders the system for ever after incapable of disease from variolous contagion. What change has been induced on the excitability of an individual who has had the small-pox, or vaccina, which should prevent a repetition of this formidable disease? The excitability of one who, when an infant, had been vaccinated, seems no way to have been affected. During the course of a long life, it may have undergone every possible revolution, accumulated and exhausted by turns, obedient to every stimulus; the individual may have enjoyed a life of uninterrupted health, with the most perfect use of every function, or he may have suffered a great variety of diseases; but the virulent contagion of small-pox, in respect to his system, is perfectly innocuous. No exhaustion of excitability, no affection or power of it, as limited by the Brunonian theory, can afford any explanation of this, or indeed of any train of morbid phenomena produced by contagion. By regulating the excitement, we may, indeed, prevent the fatal termination of these diseases; we may moderate symptoms, and keep action within due bounds, or we may support the languid forces of the system; but we cannot cure such a disease as the small-pox; the train of morbid changes continues without interruption. Against another disease, originating in contagion, we are better armed. The symptoms of syphilis are arrested by mercury, and the disease itself is cured; but no permanent change can be effected by any management of the excitability by means of stimuli. The same is true of other diseases that do not arise from contagion. In scurvy, wine, opium, cinchona, camphor, ammonia, mercury,

are of no avail, however dosed; the excitability may be acted upon by these, and varied at pleasure, without any good effect; a few ounces of lemon juice operate like a charm. Some other power, therefore, there must be in those agents, besides that of producing excitement, or of stimulating and exhausting the excitability. Contagions must differ from one another, and from other exciting powers, in something more than degree of activity. In opposition to this conclusion, let us now state the reasoning of Brown.

"Some contagions accompany diseases depending on too much stimulus; others, those which consist in debility. If both these are the product not of contagion alone, but by a conjoint operation also of the hurtful powers, which usually depend upon stimulus (which is a fact ascertained), the effect, therefore, in this case being the same, the conclusion is unavoidable, that their cause is also the same, and the mode of operation of both the same. It must therefore be admitted, that the operation of contagions is stimulant. It makes for the same conclusion, that no remedies, but those which cure diseases depending upon the operation of the usual hurtful powers, remove those which have been supposed to be induced by contagions. Finally, the great *debilitating energy* observable in *certain contagions* does not more prove a diversity of action in them, than it does in the case of an equal or greater degree of debility arising from cold."

Some contagions accompany diseases depending on too much stimulus, as the small-pox and measles. Others, those which consist in debility, as petechial, typhous fever, the plague.

From this statement, by what process of reasoning can we infer an identity of cause, or similar operation? The natural and unavoidable conclusion seems rather to be, that the one class of contagions is exciting, the other sedative. Nay, the proof of a sedative operation is the more complete of the two. "The great *debilitating energy* observable in certain contagions," recognised by Brown, and most unluckily compared by him with the debility arising from cold, is an argument for their sedative power, or it proves, at least, that the debility arising from these contagions, and from cold, is the consequence of direct defective excitement. For the debility arising from exciting powers is indirect, being the consequence of previous excitement, and waste of excitability, while that arising from cold is direct, from deficient stimulation, and want of excitement.

Our conclusion then would be, "That the great debilitating energy observable in certain contagions," as in the case of an equal or greater degree of debility arising from cold, which directly
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lowers the excitement of the system, proves that their operation is different from that of the usual exciting powers. "If," he continues, "both these are the product, not of contagion alone, but by a conjoint operation also of the hurtful powers, which usually depend upon stimulus, *which is a fact ascertained*; the effect, therefore, in this case being the same, the conclusion is unavoidable, that the cause is also the same, and the mode of operation of both the same." The force of this argument we do not profess altogether to comprehend. Are not diseases arising from contagions, the product of those contagions? Can they be produced or imitated by any other power, or any other set of powers. How shall we produce small-pox, but by the contagion of that disease? What other powers conspire with the contagion? Doubtless there must be blood, and food, and heat, and air, and many other powers acting on the system, without whose conjoint operation the disease could never be produced. But the usual effects of these powers are not any specific disease, but life and health. What are the other hurtful powers which usually depend upon stimulus, whose conjoint operation with contagion is necessary to produce the disease? We know of none. When we were in the practice of inoculating for the small-pox, we never applied any of those hurtful powers; we allowed our patients to remain as much as possible in the most natural situations, where they might enjoy salubrious air and innocent diet; we carefully avoided any excessive stimulus, and balanced the excitement with Brunonian scrupulosity; yet we seldom were disappointed in producing the disease in the most regular form. We have seen the disease take place, and run its course under every possible degree of excitement; we have seen half-starved children affected with it, as well as the most robust and plethoric; we have known some killed by cold and starvation, and some stimulated to death by heat, wine, and ardent spirits; and still the contagion operated while life remained.

The venereal disease, in like manner, is the immediate product of the syphilitic virus, can in no other way be produced, and needs not the conjoint operation of any other hurtful powers. It is not therefore a fact ascertained, that these diseases are not the product of contagion alone.

It is true indeed, that some circumstances conspire to render individuals more susceptible of disease from the contagion of petechial, typhous fever, and the plague. The depressing passions, inanition, depletion, confined and foul air, and cold, have been enumerated as predisposing the system to the action of contagions, or, in other words, as conspiring with contagion in producing the disease; and, in this sense, the disease may be said to

be the conjoint product of these hurtful powers and contagion. But these hurtful powers do not depend upon stimulus, as is alleged in the paragraph we have quoted, but upon the want of it. They are all, as we learn from the volumes before us, examples of the diminution of stimulus, of its reduction below the degree necessary to support excitement, leading necessarily to direct debility, which consists in a low excitement, and accumulated excitability. If, then, contagions conspire with these defective powers, and, by their *great debilitating energy*, produce diseases of extreme asthenia, it can never be maintained, on this ground, that the mode of operation of those contagions, which accompany and give birth to diseases which consist in debility, is the same with that of the usual exciting powers. So far from proving that the operation of all contagions is stimulant, the facts afford the strongest presumption for believing that these at least act as sedatives, and directly lower the excitement. But, independently of this, the more general observation, that each contagion invariably produces its own disease, which is not one simple affection of excitement, such as direct or indirect debility, but a series of complicated phenomena, of morbid changes, of deranged organization, and impeded functions, peculiar to each disease, and which, as in small-pox, proceed, though the excitability vary, and the excitement be changed, proves that something more is implied in the operation of contagions than mere stimulation, and that each has its own peculiar and specific mode of affecting the system. Nor are remedies less various in their operation, of which it is impossible to render any account on the Brunonian theory, of simple stimulation. How is the venereal disease cured by mercury, intermittent fever by cinchona or arsenic, scurvy by lemon juice? Not certainly by the mere excitement which they occasion; for this might be imitated by a thousand other agents, which, however, have no effect in curing these diseases. But our limits forbid us entering more fully upon this discussion, and what has already been stated seems sufficient for our present purpose. It must appear to the candid philosopher, that the various powers which act upon the living system refuse unlimited submission to the Brunonian hypothesis.

The general effect of stimuli is to produce excitement; but this is not the effect of all the powers, nor the only effect of those which are stimulant. Some powers exhaust the excitability by their stimulus; others appear to raise and to recruit it; and others, again, to weaken or destroy it, without previous excitement and consequent exhaustion. But, besides these general differences, there are various other peculiarities in their modes of operation. They differ in the succession of phenomena to which

which they give occasion; the intoxication produced by wine, opium, and some other narcotics, cannot be imitated by aromatics, by the preparations of antimony, or of mercury; nor the effects of these by narcotics: They differ in their power of specially affecting particular organs and functions, as the stomach, intestines, kidneys, skin, salivary glands, absorbent or vascular system, by emetics, purgatives, diuretics, sudorifics, mercury, digitalis, &c.; they differ in their power of inducing and of opposing particular organic changes, and morbid affections of the system, as each contagion produces its own disease, and no other, as syphilis and biliary diseases are cured by mercurials; scurvy by vegetable acids, and uric diseases by alkalis: They differ in the durability of effect, or change produced, as is obvious by comparing the momentary and fleeting effects of the diffusible stimuli with the permanent excitement and vigour produced by tonics, as by cinchona and preparations of iron, by wholesome food and pure air.

With these strictures, we conclude our observations on the speculative dogmas of the Brunonian system. The doctrine of excitement, the laws of excitability, and the theory of the operation of the exciting powers, as taught by Brown, have appeared inadequate to the explanation of the phenomena of life, of the actions of the natural and hurtful powers, and of the operation of remedies.

In its application to the practice of medicine, the Brunonian system is marked by a total neglect of the connexions and dependences of the different functions, of the organic derangements which take place in diseases, of the curative indications deduced from these, and of experience in the administration of remedies. As a general proof of this charge, we need only state, that, according to Brown, there are but two forms of disease, two indications of cure, and two sets of remedies. "The same debilitating remedies, which remove any one asthenic disease, remove that whole form of diseases, and the same stimulant means, which cure any one asthenic disease, remove all the rest." As particular examples, we might refer our readers to the Brunonian catalogue of asthenic diseases. To be brief, we shall select apoplexy, some convulsive diseases, those especially of young people, and scurvy. These are all diseases of asthenia, and, in the new system, treated by indiscriminate stimulation. Yet the whole history of apoplexy, and our knowledge of the nature and causes of that disease, derived from observation of all the antecedents, and from thousands of dissections, have led to a very different practice, the utility of which is confirmed by the experience of the most accomplished physicians of every age and country.

We too have often witnessed the happy effects of the method of depletion in attacks of apoplexy. Many lives have been preserved by venesection and large evacuations, in cases where we firmly believe the Brunonian practice would have accelerated the fatal termination of the disease. Often, too, when vertigo, headach, tinnitus aurium, partial spasms, or palsies, and other precursors, have sounded the alarm, the disease has been prevented by those means which, as debilitating, should, according to Brunonianism, have induced the attack. Amongst many other unquestionable authorities on this point, Tissot, in his epistle to the celebrated Haller, may be quoted. His language is indeed very strong; one would almost imagine he had the modern Brunonians in view. "Dum jacet immobilis æger, æssesores et sæpe medicus, pessimo errore motum restituere conantes, indefinenter ægrum *variis stimulis* laceffunt; sed quam damnose; non deficit enim motus cordis quem suscitare solum possumus; at deficit potestas sentiendi, et artus movendi, unice restituenda compressionem cerebri minuendo; quam minuere una est methodus, vitales nimirum motus et plethoram rescindendo.

"Sedulo ergo cavendum ab omni concussione, volutatione, frictione; ab omni potu calefaciente, aromatico, spirituofo, ab omni demum auxilio quod deprimendam vim circulationis augere possit. Sedulo prohibenda omnia remedia quæ stimulo aliquo sædantur; omnia alimenta quæ aut acre habent, aut plenius nutriunt." Examples he then relates of the most fatal consequences resulting from neglect of these cautions, compared with others of the happy effect of the evacuant plan of treatment.

Many diseases of children, amongst others, cases of convulsion, proceed from irritations often in the primæ viæ. Every practitioner conversant in those diseases knows the danger of employing the diffusible stimuli recommended by the Brunonian theory, and how readily, on the contrary, these formidable symptoms frequently yield to evacuants. One disease has been noticed in a former number of this Journal, the chorea S. Viti, hitherto unsuccessfully treated by stimulants and tonics, which has often been cured by the removal of irritations, by the extraction of a tooth, or by a course of purging.

But the climax of Brunonian prejudice and error may be shortly exposed in his observations on the treatment of scurvy. This too Brown considers as a disease of general and uncomplicated asthenia, to be cured by the ordinary stimuli, by wine, gestation, and exercise, by fresh meat, with or without greens. "The pretence," he adds, "of its cure being effected by greens, roots, sour crout, and similar things, so much boasted of lately, which,

which, without the remedies just now mentioned, could not fail, by their *debilitating operation*, to aggravate the disease, is derived from a noted blunder among physicians, by which they are led to overlook the most certain, simple, and evident facts, and take up, in place of them, the greatest falsehoods, or such facts as have a very narrow foundation in truth."

Now we will venture to assert, in opposition to this statement, that the sea scurvy which is here spoken of never was, and never can be, cured by Brunonian stimuli, by wine, by exercise, by fresh meat even, *without greens, roots, and similar things*; that, on the contrary, it has been cured, and is daily cured, by these very things, without the assistance of fresh meat, of wine, or of other stimuli. The truth is, that scurvy is now cured on board our ships of war by vegetable food and vegetable acids, without any other auxiliary remedy, and even at sea, when fresh meat cannot be procured. A scorbutic patient is now seldom or never sent to an hospital on shore; he is cured on board by a plentiful allowance of vegetables, if in harbour, and by large doses of lemon juice, without any other remedy or change of diet, if the ship is at sea.

"We have often," says Dr Trotter, "heard people talk of land air and land recreations for the scurvy. There is not, at present, an officer in the fleet that, in doing justice to either his people or his country, would prefer the cure out of a ship."

The effect of good lemon juice, liberally administered in scurvy, comes indeed nearer the idea of a specific than that of any other remedy we are acquainted with. We have known scorbutics cured by it without any change of diet, or other circumstances, at sea, in little more than a fortnight. We refer our readers, for further proof, to Dr Baird's letter, and other evidences, in the *Medicina Nautica* of Dr Trotter, to whose talents and exertions the naval service of this country is greatly indebted. Such are the facts which Brown, to suit his system, has stigmatized as the greatest falsehoods. Such are the remedies of scurvy which experience has recommended, but which, according to the new system, should rather aggravate the disease by their debilitating operation.

These are a few of the many examples which might be given of the dangerous errors of the Brunonian system, of its contradictions, inconsistencies, and defects. But it is time to put an end to this review; already, perhaps, in the opinion of some of our readers, too long. The doctrine of excitement, even if the laws of excitability were fully ascertained, would still be imperfect as a theory of life, which must also include the doctrines of the chemico-material processes, constantly operating in the systems of organized beings.

VI.

Bulletin de l'Ecole de Medecine de Paris, et de la Société établie dans son Sein. Première Année. No. I. 8vo. Paris, An. XIII.

THE duties of the professors in the medical school established at Paris are not confined to the lectures delivered from its chairs. They are enjoined to watch over the public health, and to contribute, by every means in their power, to the advancement of the sciences connected with medicine. They form a society, to whose care the law has committed every investigation relative to the topography of France; the collection and publication of the ancient memoirs of the faculty, of the royal society of medicine; and of the academy of surgery, and, in general, the advancement of medical science. The society is composed, at present, of sixty members, viz. the twenty-seven professors, the superintendent of the anatomical preparations, sixteen associates, and sixteen adjoints. It has also chosen sixty national associates residing in the different departments of France, as well as many foreign associates, and an undetermined number of correspondents.

Already, we are informed by this bulletin, their labours are considerably advanced. Several important papers have been read before the society: amongst many others are promised to the public, Lassus on fungous tumours of the periosteum; a memoir, by Dupuytren, on a new genus of medical constitutions, founded on the pathological changes observed in a given number of dead bodies, at different ages, in different seasons of the year, &c.; a memoir on the veins of the bones, by the same; observations and a new classification of the hydatids of the human bodies, by Laennec; experiments on pus, by Schwilgué; a memoir, by Duvernoy, on the tongue of birds; on the different species of ipecacuanha, and on the fucus helminthocorton, by Decandolle. And as the society is constantly occupied in arranging the manuscript memoirs of the former academical societies to which it has succeeded, we hope much from its future publications.

In this we are presented with a very curious report made to the society, by M. Dupuytren, in the name of a commission composed of Mess. Cuvier, Leroy, Bandelocque, and Jadelot, appointed

pointed to examine a phenomenon which, by its singularity, had excited, to a great degree, the curiosity of physiologists, and the attention even of the minister Chaptal, "a foetus found in the belly of a young man of 14."

In such cases, which are so contrary to ordinary experience, it is the duty of the philosopher, on the one hand, to admit no more than what is rigorously proved, and, on the other, not rashly to circumscribe the powers of nature. Such appears to have been the disposition under which the following history and reflections were drawn out by the committee of the medical society.

"Amidée Biffieu, in whose body the foetus was found, had complained, from the time he could make himself understood, of a pain in the left side, which was, at a very early period, enlarged into the form of a tumour. These symptoms continued, without materially affecting the health of the child, till he had attained his 13th year, when he was suddenly attacked with fever. From that moment the tumour became very large and painful; and, after some days, his stools were observed to be foetid and puriform. At the end of three months from this attack, he plainly laboured under a sort of pulmonary consumption. Shortly afterwards he passed by stool a ball of hairs, and at the end of six weeks more he died."

"The body being opened by Mess. Guérin and Bertin, there was found in a sac attached to the arch of the colon, and communicating with it, some balls of hair, and an organized mass, resembling, in many points, a human foetus. The connexion between the habitual indisposition of Biffieu and his disease is obvious, as well as that between the disease and the appearances by dissection. This first point being ascertained by authentic documents, it became of the highest importance to determine the position of the organized mass, and the situation in which it had been formed. Now, the inspection of the parts, sent to the society by M. Blanche, surgeon at Rouen, clearly demonstrates that it was contained in a cyst situated in the transverse mesocolon, near the intestinum colon, and without the canal of the primæ viæ. The cyst, indeed, communicated with the intestine; but this communication was recent, and, in some measure accidental; and the remains of the separation between the two cavities were still evident."

"The true position of the organized mass being determined, it was necessary to ascertain its nature. We found, in its form, many points of resemblance with the human foetus, but we observed, at the same time, a great many particular dispositions, some of which appeared to belong to vices of conformation, and others

others to derangements successively produced by time, and by its retention in the mesocolon."

"There appeared a sure method of determining the true character of this production. It is evident, that if it possessed a system of organs independent of those of the body to which it was attached, it should be considered as an individual; on the contrary, if nothing could be discovered but a continuous organization, it should be referred, whatever might be its external form, to the class of tumours which originate in every part of organized bodies, and be no longer regarded as a phenomenon. The dissection of this mass, performed with extraordinary care, discovered traces of some of the organs of sense; a brain, a spinal marrow, and large nerves; muscles degenerated into a kind of fibrous matter; a skeleton composed of a spine, a head, a pelvis, and the rudiments of the limbs; lastly, an umbilical cord, very short, and inserted into the mesocolon without the intestinal cavity; an artery and a vein ramified at both extremities, that belonging to the foetus, and that belonging to the individual in whom it was found. The existence of the preceding organs certainly demonstrates the individuality of this organized mass, although it was otherwise deprived of the organs of digestion, respiration, of urine, and of generation: the absence of a great many organs necessary to life ought only to make us regard it as one of those monstrous foetuses destined to perish at the moment of their birth."

"The existence of an organized mass in the mesocolon being ascertained, its analogy with the human foetus being determined, it still remained for us to inquire how long it had been there, how formed in the body of another individual, and how it had existed there?"

"This foetus being found without the alimentary canal, it cannot be allowed to have been introduced into the body of the young Bissieu after birth; which destroys the greater number of hypotheses which have been imagined to explain this phenomenon. The sex of Bissieu, perfectly ascertained by Mess. Delzeuse and Bronard, by order of the prefect of the Eure, precludes, besides, all idea of fecundation; nor could he be self-impregnated, since he was provided with male organs only, without the smallest trace of those of the other sex.

"The facts which form the basis of this report lead naturally to very different notions; the indisposition to which Bissieu had been subject from childhood; the nature of the symptoms of this indisposition; those also of the disease which immediately succeeded it, and the appearances discovered on dissection, are so allied, that we cannot avoid acknowledging between them a necessary

cessary dependence, and concluding that this unfortunate young man had been born with the cause of the disease which cut him off at the end of 14 years.

Many other facts conspire to prove the long existence of the foetus in the body of the young Bissieu. Such are, the size of its teeth, the fibrous degeneration of its muscles, the induration of the brain, the abrasion of the skin in a great many points, the caries of several bones, the ankylosis of others, the ossification of the cyst, &c. &c. ; changes which require a very long time. But, admitting that this foetus was coeval with the individual to whom it was attached, there still remains, for those who would explain every thing, a great difficulty to surmount, its situation in the transverse mesocolon. The curious facts exposed in this report are certainly the most important part of it, and are, to a certain extent, independent of any explanation which may be offered : it necessarily, however, became an object to seek, in the facts, an explanation of the phenomenon. Not unfrequently we meet with twins connected by the back, by the belly, by the head, or by several other parts. A certain degree of compression excited by the organs of the mother on the very tender embryos at the time of conception, or soon after, may occasion these monstrosities. In other cases, not less frequent, the twins are so identified, that several organs wanting to each are replaced by organs common to both. In the former case, the monstrosity is owing to a cause purely mechanical, and, in the latter, to a radical vice in the organization of the germs. To one or other of these causes we must necessarily have recourse for the explanation of the phenomenon which forms the subject of report. Thus, in the case of Bissieu, either one of two separate germs had penetrated the other in consequence of some mechanical action, or by some primitive disposition, of which it would be as difficult to give an account, as of every thing else connected with generation ; they have always existed in the same way in which they were afterwards observed.

“ One of these explanations being admitted, the existence of a foetus in the abdomen of another individual is no longer so very surprising, and the sex of that, who has so long performed the function of mother, becomes nearly indifferent. This foetus may be compared to the fruits of extra uterine conceptions. In fact, to whatever part of the abdomen the fecundated germs attach themselves, their mode of nutrition is the same : in every situation they absorb their nourishment by their own vessels ; they grow till the term marked by nature for their expulsion ; and if they cannot be expelled when this term arrives, they putrefy, are converted into fat, shrivel, ossify, or they grow till, by irritation

tation of the neighbouring parts, an abscess is formed, through which they may be expelled. This, in some measure, had taken place in the present example; the sides of the cyst enclosing the fœtus, as in other cases of extra uterine gestation, had inflamed; the inflammation had extended to the intestine; the partition which separated the two cavities had been destroyed; a communication had been formed between the cyst and the colon; pus and hair had been passed by stool; and a complicated pthisis had finally put a period to the patient's sufferings."

"Had the fœtus been placed nearer the surface, the cyst would not have opened into the intestine, and this phenomenon, without any change in its nature, would have appeared less extraordinary."

"This fœtus must have been nourished during the whole life of the individual, who may be considered as its brother; the preservation of its body from putrefaction, and the circulation of blood through its organs, leave not a doubt as to this point. The want of the organs of digestion, of respiration, generation, &c. form no objection to the life of the fœtus, since these organs, simply nourished in ordinary fœtuses, do not exert their functions till after birth. But the life of this fœtus consisted necessarily of a small number of functions, on account of its particular structure; the organs of circulation alone performed all that was necessary to the life of the other parts. They received and returned the blood from the mesocolon to the fœtus, and from the fœtus to the mesocolon."

VII.

A short Account of the Cause of the Disease in Corn, called by Farmers the Blight, the Mildew, and the Rust. By Sir JOSEPH BANKS, Bart. 8vo. London, 1805.

THIS subject is so interesting and important, that too much attention cannot be paid to it. Hitherto it has received very little. Agriculture and medicine are said to be closely connected. The diseases of plants and of man, and of other animals, must be much more so. We, therefore, deem it our duty to give a slight sketch of the contents of this laudable essay, in order to excite the observation of those medical men, whose residence in the country, and whose inclination, may dispose them

to

to investigate the origin and progress of this vegetable disease, and to assist in discovering the cause and the cure of such a formidable malady. The learned author remarks, that botanists have long known that the blight in corn is occasioned by the growth of a minute parasitic fungus on the leaves, stems, and glumes of the living plants. Fontana published in 1767 an elaborate account of this mischievous weed, with microscopic figures. More modern botanists, as Sowerby, have given figures both of corn and of grass affected by it, but have not used high magnifying powers. Two engravings are here given from accurate drawings, which illustrate strongly what is said about these parasitic plants.

It is presumed that the seeds of the fungus gain admission by means of the pores which exist on the straw, the leaves, and the glumes, and at the bottom of the hollows to which they lead; they germinate and push their minute roots into the cellular substance beyond the bark, where they draw their nourishment, by intercepting the sap that was intended for the use of the grain. The corn of course becomes shrivelled in proportion as the fungi are more or less numerous in the plant, and as the kernel only is abstracted from the grain, while the cortical part remains undiminished, the proportion of flour to bran, in blighted corn, is always reduced in the same degree as the corn is made light. Every species of corn is subject to the blight, but spring corn is less damaged by it than winter, and rye less than wheat, probably because it is up and cut down before the fungus has had time to increase in any great degree. The leaf probably is first infected in the spring, or early in the summer. The fungus is then of an orange colour; it afterwards becomes brown. Each individual fungus is so small, that every pore on a straw will produce from 20 to 40 fungi; and every one of these will produce at least 100 seeds. A few diseased plants will thus very soon infect a whole field and neighbourhood. The seeds are carried by the air, if permitted to ripen and to burst. Several other curious facts are introduced, which do not so exactly come under the description of those *quæ ad nos pertinent*. This short abstract is intended to make the subject an object of inquiry, and to engage the physician, the naturalist, and the farmer, to work together for the public good.

VIII. & IX.

Observation sur une Maladie de l'Organe de l'Ouïe guérie radicalement par la Perforation de la Membrane du Tympan. Par J. P. MAUNOIR.

Observation sur une Surdité guérie par la Perforation de la Membrane du Tympan. Par P. C. CELLIEZ.

[See Journal de Médecine, Chirurgie, Pharmacie, &c. Par M. M. Corvisart, LEROUX et Boyer, tom. ix. p. 196. et 202. 8vo. Paris. An. XIII.]

THESE cases are important, as, in both instances, the operation first performed by Mr Astley Cooper effected a complete cure. The subject of M. Maunoir's observation was a man of 40, who had lost his hearing in consequence of a chronic affection of the fauces, which had completely obliterated the eustachian tube. On perforating the right tympanum with a small trocar, he remained some time stupid, and then exclaimed, "Au nom de Dieu, Messieurs, ne criez pas; vous me faites mal;" although the bystanders were speaking in a low tone of voice. In eight days this excessive sensibility ceased. The left ear was then perforated, without producing any effect. Twenty days after the second operation, his hearing was very little diminished, but there only remained a very small hole in the right tympanum: to prevent it from shutting up, it was perforated anew, not without effect; but, on examining the left ear, it was discovered that the tympanum was hid by a false membrane, which alone had been perforated in the second operation. M. Maunoir removed it entirely with a pair of forceps, and then perforated the real tympanum, which, it is remarkable, was followed by the same astonishment and excessive sensibility to sound as the first operation.

The subject of Dr Celliez's case was a lady 59 years of age, subject to catarrhal affections, but who lost her hearing twenty-two years before, during an acute disease. The one tympanum was no sooner pierced, and the trocar withdrawn, than she exclaimed, "J'entends," and requested the surgeon to speak lower. The other tympanum was perforated at the same time, and her hearing was restored, but at first with too great a degree of sensibility. Dr Celliez thinks he has improved on the operation of Mr Cooper by using a curved trocar, and of a considerably larger size, as the chance of the perforation healing up is lessened, and, by perforating the tympanum at its lowest and most anterior edge, there can be no current of air, and there is less chance of any hæmorrhagy.

PART

PART III.

MEDICAL INTELLIGENCE.

Board of Health.

IT is with infinite satisfaction that we insert the following extract from the gazette, as it shows that Government is not wanting in its endeavours to promote and preserve the general health of the inhabitants of this empire, so far, at least, as *contagion* is concerned; and we sincerely hope and trust that the obviously good effects, which we confidently expect from the exertions of the present limited and local Board, will show the propriety of extending its views to many other objects, and of establishing corresponding branches in every county and large seaport town.

COUNCIL-OFFICE, WHITEHALL, MAY 28. 1805.

His Majesty has been pleased to establish a Board of Health, to prepare and digest rules and regulations for the most speedy and effectual mode of guarding against the introduction and spreading of infection; and for purifying any ship or house, in case any contagious disorder should unhappily manifest itself in any part of the United Kingdom, notwithstanding the precautions taken to guard against the introduction thereof; and to communicate the same to all magistrates, medical persons, and others, his Majesty's subjects, who may be desirous, and may apply to be made acquainted therewith.

The said Board hold their meetings at Somerset-Place, and is composed of the following persons, viz. Sir Andrew Snape Hamond, Bart. Comptroller of his Majesty's Navy, President—Sir Lucas Pepys, Bart. President of the Royal College of Physicians—Dr Reynolds, Sir Francis Milman, Bart. Dr Hunter, Dr Heberden, Fellows of the said Royal College—Sir Alexander Munro, one of the Commissioners of his Majesty's Customs—Dr Harness, senior Member of the Board for the care of sick and wounded seamen.

New Medical and Surgical Society in London.

WE have great pleasure in informing our readers that a new Medical and Surgical Society is about to be established in London, for the purpose of "conversation on professional subjects, for the reception of communications, and for the establishment of

a library." From an institution of this nature in the metropolis, considerable utility may be expected to accrue, especially when conducted by gentlemen of the highest reputation and respectability in the profession; many of whom, besides those whose names are in the list of the committee, have expressed their warmest hopes for the success of the institution, and their intentions of promoting it by their personal assistance, as much as their avocations will permit. At a meeting of physicians and surgeons, held at the Free-Masons' Tavern on the 22d of May, the following gentlemen were appointed a committee for digesting a plan for the management of the society, according to a basis agreed upon at that meeting; viz. Mr Abernethy—Dr Babington—Dr Baillie—Dr Bateman—Dr Blane—Sir William Blizard—Dr Clarke—Mr Cooper—Dr Curry—Sir Walter Farquhar—Dr Frampton—Mr Forster—Mr Heavyside—Dr Marcet—Dr Saunders—Mr Thomas—Mr Wilson—Dr Yelloly.

Progress of Vaccination.

IN preparing the notice of the progress of vaccination inserted in our last number, we were struck with the difference of the numbers stated to have died of the small-pox, during the two last years, by the two great vaccine institutions of the metropolis. As we could not suppose that either of these had wilfully published a misstatement, and we had at that time no means of ascertaining which was correct, we thought it most impartial and proper to publish both, leaving each to rest on its own authority. We have since been honoured with a letter from the Broad-street Vaccine Institution, enclosing the bills of mortality, with which the statement of that society perfectly coincides. We cannot altogether account for the error into which the Royal Jennerian Society has inadvertently fallen; but we may observe, that if the monthly deaths had been accurately stated by it, the sum-total is incorrect, as, instead of 586, it should have been 636. The fundamental error has not, however, escaped the notice of the Society itself, as, in the report of the annual general meeting, 6th March 1805, the proper number, 622, is inserted. On account of this mistake, we have thought it proper to insert the deaths from small-pox during the last 18 years, as stated in the bills of mortality.

A.D. 1804. 1803. 1802. 1801. 1800. 1799. 1798. 1797. 1796.
Died. 622. 1202. 1579. 1461. 2409. 1111. 2257. 522. 3547.
 A.D. 1795. 1794. 1793. 1792. 1791. 1790. 1789. 1788. 1787.
Died. 1040. 1913. 2382. 1568. 1747. 1617. 2077. 1001. 2418.

In compliance with the desire of the Broad-street Vaccine Institution, we insert the following Resolutions, contained in their last Quarterly Report :—

1. Resolved, That it appears from the numerous reports that have been transmitted or attested by the members of the medical establishment from abroad, from our own country, and from their own experience, that the proportion of failures in the cow-pock inoculation to give security against the small-pox, which have been published, does not amount to more than 50 out of 250,000 vaccinated persons.

2. Resolved, That it does not appear, on examination of the published reports of these failures, and the investigation of many of them by the medical establishment of this institution, that ~~they~~ have been substantiated by admissible and adequate evidence.

3. Resolved, That it seems more than probable, that all or many of even the admitted-of failures, according to the evidence produced, are liable to be deceptions, on the same grounds as in the asserted cases of the occurrences of the small-pox, subsequent to the small-pox.

4. Resolved, That, considering that the cow-pock inoculation has been the practice of producing an affection which practitioners, in the first instances, in general had not previously seen, and the history of which was so little known, and, considering the greater deceptions than in the small-pox inoculation to which practitioners are exposed, it was to have been expected that a much greater proportion of supposed failures would have occurred.

5. Resolved, That it does not appear that a single instance has occurred of the small-pox, subsequent to the cow-pock, during more than five years practice, at this institution ; for, on inquiry, two instances, which were said to be such, were found to be inadmissible cases : viz. one of them on account of the supposed cow-pock preceding being only a local affection ; and, in the other, that it was only proved that there was a local affection from the variolous inoculation.

6. Resolved, That the numerous instances of exposure of vaccinated persons to the small-pox, since the commencement of the practice in January 1799, and likewise of repeated reinoculation with small-pox matter at this institution, and which have been communicated, establish the fact, that a person who has really gone through the cow-pock is incapable of the small-pox, on as firm ground as the fact of variolous inoculation giving security against the small-pox.

7. Resolved, That, considering the novelty of the practice of vaccine inoculation, and that it has not been performed, in many instances, after such a mode as might give the greatest chance of security, it is advisable to take precautionary measures with many who have been inoculated, or who shall undergo the practice in future.

8. Resolved, That the tests of patients who have been inoculated being secure, are, exposure to effluvia, and contact with persons in the small-pox ; inoculation with small-pox matter, and reinoculation with

vaccine matter. But, for reasons set forth in a memoir read at the quarterly meeting by Dr Pearson, the repetition of reinoculation with vaccine matter is a preferable test; for it does not appear, from abundant evidence brought forward by the experience of Dr Pearson, that a person who has gone through the cow-pock is susceptible of it a second time.

9. Resolved, That such practitioners as are desirous of seeing proofs of the proposition last stated (that a second inoculation for the cow-pock is an equally decisive test of the question of the susceptibility of a vaccinated person to take the small-pox, as inoculation with variolous matter) be invited to attend at the institution for that purpose.

10. Resolved, That although it is probable, from the amount of the deaths by the small-pox in the bills of mortality in two preceding years, viz., in 1803, of 1202, and in 1804, of 622, that the proportion of deaths by that disease has been diminished by vaccine inoculation; yet it does not appear justifiable to draw this conclusion positively at present; because, in former years, previously to the new practice, even a still smaller proportion occurred by small-pox, viz. in 1795 there were 1040; in 1797 there were only 522; and in 1799 there were 1111: therefore, that it will require at least five successive years of vaccine practice to draw a just inference.

11. Resolved, That Dr Pearson be requested to allow the Memoir on the State of the Practice of Vaccination, and on the conduct of it, to be printed, in order to quiet the minds of many families disturbed by the late unfavourable reports.

12. Resolved, That the medical establishment continue their practice of registering their observations, as the most likely means to reduce to certainty the vaccine practice as a prophylactic of the small-pox.

By order,

WILLIAM SANCHO, Secretary.

*Account of Diseases treated at the Public Dispensary, Garry-Street,
from 28th February to 31st May 1805.*

ACUTE DISEASES.

No. of Cases.					No. of Cases.				
Tertiana	-	-	-	7	Pneumonia	-	-	-	12
Quotidiana	-	-	-	1	Pertussis	-	-	-	5
Ophthalmia	-	-	-	3	Urticaria	-	-	-	1
Phrenitis	-	-	-	1	Herpes (shingles)	-	-	-	1
Cyanche tonsillaris	-	-	-	9	Erysipelas	-	-	-	1
parotidæ	-	-	-	1	Rheumatismus acutus	-	-	-	2
Catarrhus	-	-	-	54	Febris Infantium	-	-	-	6

CHRONIC

CHRONIC DISEASES.

	No. of Cases.		No. of Cases.
Cephalæa - - - - -	14	Menorrhagia - - - - -	5
Catarrhus chronicus - - - - -	52	Amenorrhœa - - - - -	5
Hæmoptysis and Phthisis - - - - -	29	Leucorrhœa - - - - -	3
Asthma - - - - -	3	Schismus Uteri - - - - -	4
Dyspnœa - - - - -	5	Prolapsus Uteri - - - - -	1
Dyspepsia - - - - -	40	Hysteria - - - - -	8
Dysphagia - - - - -	1	Epilepsia - - - - -	2
Asthénia - - - - -	89	Paralysis - - - - -	10
Colica Pictonum - - - - -	1	Rheumatismus chronicus - - - - -	30
Vermisatio - - - - -	21	Lumbago - - - - -	4
Diarrhœa - - - - -	5	Anasarca - - - - -	6
Dysenteria - - - - -	5	Hydrothorax - - - - -	3
Tabes mesenterica - - - - -	3	Ascites - - - - -	2
Enterodynia - - - - -	8	Physconia - - - - -	1
Hæmorrhoids - - - - -	6	Scrofula - - - - -	3
Prolapsus Ani - - - - -	1	Purpura, or petechiæ sine febre - - - - -	1
Icterus - - - - -	1	Impetigo (running Tetter) - - - - -	5
Hepatitis chronica - - - - -	2	Ecthyma (ulcerated Tetter) - - - - -	1
Nephralgia - - - - -	2	Scabies (Itch) - - - - -	13
Dysuria - - - - -	2	Porrigio (Scald-head) - - - - -	1
Enuresis - - - - -	1		

The continuance of cold weather, with almost constant north-east winds, has protracted the season of catarrhal and rheumatic complaints beyond the usual period. With the exception of these, however, and the disorders of the stomach, which are constantly induced by the moral and physical circumstances peculiar to crowded cities, no class of diseases has been prevalent to any extent. The remarkable diminution, or rather absence, of acute contagious diseases, which was noticed in the last report, still continues to be observed: a few cases of hooping cough being the only instances which have required our attention in this district.

The majority of the intermittent fevers, which we occasionally see in London, is brought from the marshy parts of the country: but instances sometimes occur, which cannot be traced to the miasmata of marshes, nor even to unwholesome exhalations from damp and uncleanly situations of any kind. One of the patients in the preceding list had not been absent from London for many years, and has lived, during the last eight months, in a court between Holborn and the north side of Lincoln's-Inn Fields; yet he was attacked with a very obstinate tertian. From similar facts, it has been inferred, that intermittents occasionally occur, inde-

pendent of the operation of marsh miasmata *. But, in attempting to ascertain the origin of intermittents, one circumstance requires attention; viz. The period during which the influence of miasmata may lie dormant in the constitution, or the time which may intervene between the exposure of the person and the commencement of the disease. An inattention to this circumstance tends very much to invalidate the conclusion which might be drawn from the cases of Dr Beddoes. The first case which appeared at the dispensary commenced in March; the patient had resided in London since the beginning of December, at which time he returned from Essex. About the same time, two patients, attacked with ague, who had also returned to town from Kent or Essex early in December, applied to a medical friend in the city. In these instances, a period of three months had elapsed between the infection (if the term may be used) by miasmata, and the appearance of the consequent ague.

Another patient in the above list, after residing several months at Sheerness, returned to London in November last, and, in the beginning of the present month, was seized with tertian, having lived, during an interval of nearly half a year, in Liquor-pond Street, Gray's Inn-lane. From these facts, it would appear that the latent period of intermittents is very indefinite; probably greater and more irregular than that of continued fever, according even to the extensive limits allowed by Dr Haygarth.

The case of herpes, or shingles (*zona herpetica*, *zona ignea*, *zoster*, and *ignis sacer* of different authors), is placed among the acute diseases, because, except that it is not contagious, and probably may occur more than once in the same individual, it has every affinity with the febrile exanthemata. There is considerable confusion in the descriptions and characters of the disease described by different writers under these names. Some include an acute, others a chronic disease, some a pustular, others a vesicular eruption, and some an ulcerous affection, under the same denomination. Hoffmann † considers the *zona ignea* as a species of erysipelas, and the *ignis sacer* of Celsus ‡ as synonymous with the herpes exedens. But Bursarius § treats of the *zona*, the disease in question, under the title of *ignis sacer*; distinct from the erysipelas, but in the same class of febrile exanthemata. Much of this disagreement has probably arisen from inattention in the

* Two cases which were produced in persons who constantly resided in the most healthy parts of the metropolis, are mentioned by Dr Willan. See Reports on Dis. in London, p. 48. And three which occurred at Bristol during a hard frost in February are related by Dr Beddoes. Med. Facts and Obs. vol. vii.

† Oper. tom iv. p. 1. cap. xiii. § 6.

‡ De Med. lib v. cap. xxviii. § 4. "Sacer quoque ignis malis ulceribus annumerari debet," &c.

§ Inst. Med. Pract. tom ii. cap. 3

the use of the word *pustule*, which is applied indiscriminately to the *pustule*, properly so called, and to the *vesicle* or *phlyctena*. The disease is not of very frequent occurrence; but in the few cases which I have seen, its course and symptoms have been tolerably uniform. The patients have complained of a sense of heat, and of shooting pains through the chest or epigastric region, attended with slight febrile symptoms, for three or four days; a few patches of papulæ then appeared about the breast or shoulders, with a circumscribed effervescence around them; these put on speedily a vesicular appearance, and in two or three days formed a circular or oval cluster of transparent vesicles, whilst other patches of papulæ continued to appear with a certain degree of regularity, nearly in a line extending from the sternum to the spine on one side, sometimes like half a sash round the waist, sometimes like a sword-belt across the shoulder. “Hac tamen perpetua lege, ut ab anteriore parte nunquam lineam albam, nunquam a postica spinam transcenderent.”* The vesicles, which first appeared, having become large and confluent, lost their transparency, acquired a blue or livid colour, and sunk into a brown scab. Those patches which appeared later went through the same course; and, in ten or twelve days, nothing but the thin brown scabs remained. Slight febrile symptoms continued during the whole progress; but the most distressing part of the disease was an intense darting pain, which came on at the close, and which was scarcely to be allayed by the power of opium. This accords with the observation of Hoffman: “Inde quidem symptomata remiserunt, excepto exquisito ardente dolore, qui tantus erat, ut nec somnum capere, nec locum affectum contingere posset†.” The complaint is generally mild, and I believe harmless; and slight debility ensues. Gentle laxatives and diaphoretics, with occasional anodynes, seem to be the only medicines requisite to alleviate the symptoms during its course.

Professor Callisen ‡ has given the following description of the disease with his usual terseness: “Zona, cingulum, zoster, vocatur species herpetis, quæ sub forma vesicularum flavescens, livescens, juxta truncum corporis prorumpit; rare artus occupat, rarissime medium corpus tanquam cingulum circumdat ac amplectitur totum, gravi dolore urente ac febre stipata. --- solis remediis internis purificantibus, demulcentibus, lenibus diaphoreticis tractandus --- Graviora symptomata interdum methodum poscant antiphlogisticam.”

May 31. 1805.

* De Haen de Divis. Febr. p. 112. a case quoted by Barferius. There is a notion, as old as Pliny, that if it completely surrounds the body, it is fatal, “Zoster appellatur, et enecat, si ciuxerit.” Nat. Hist. lib. xxvi. cap. 11.

† Opera, tom. iv. cap. xiii. § 8.

‡ Syst. Chirurg. Hodiern. tom i. p. 424.

On the 24th of June, the SENATUS ACADEMICUS of the University of Edinburgh conferred the degree of Doctor in Medicine on the following Gentlemen, after having gone through the appointed examinations, and publicly defended their respective Inaugural Dissertations.

FROM AMERICA.

James Maury Morris,	<i>De Cynanche maligna</i>
Samuel Stuart Griffin,	<i>De Terra natorum Vegetatione</i>

FROM BARBADOES.

Arthur R. Hollingsworth,	<i>De Uratbra Stricture</i>
William Husbands,	<i>De Menfibus, eorumque Emanatione</i>
Daniel Thomas Malloney,	<i>De Ufu Aquæ frigida in Febribus</i>

FROM ENGLAND.

John Booth,	<i>De Arthritide</i>
Edmund Lockyer,	<i>De Chorea</i>
Michael Allen Pryn,	<i>De Dyspepsia</i>
Daniel Thompson,	<i>De Scarlatina</i>

FROM IRELAND.

Bernard Campbell,	<i>De Apoplexia</i>
Robert Drought,	<i>De Chlorofi</i>
Thomas Ferris,	<i>De Hydrocephalo interno</i>
Richard Gamble,	<i>De Scarlatina</i>
Terence Henry,	<i>De Typho</i>
Charles D. Johnston,	<i>De Gangrana nescromiali</i>
George Lee,	<i>De Hydrathorace</i>
Eugene M'Swiny,	<i>De Apoplexia</i>
Samuel Mercer,	<i>De Chorea sancti Viti</i>
John M'Mullis,	<i>De Erythemate mercuriali</i>
Maurice Neligan,	<i>De Ferro</i>
Laurence B. Neligan,	<i>De Morbis Respiratoriis</i>
Abraham C. Orpen,	<i>De Ufu Purgantium</i>
John O'Dwyer,	<i>De Cynanche tracheali</i>
Edmund O'Leary,	<i>De Phthisi pulmonali</i>
Eugene Sullivan,	<i>De Hydrocephalo interno</i>

FROM SCOTLAND.

John Ford Anderson,	<i>De Lumborum Arthropogis</i>
James Barclay,	<i>De Apoplexia</i>
John Barron,	<i>De Nutritione Fetus</i>
John Garrack,	<i>De Febre continua</i>
John Gordon,	<i>De Vulnere natura sanando</i>
John Lindsay,	<i>De Febre remittente India occidentalis</i>
Allan Maedowall,	<i>De Dyspepsia</i>
John Miller,	<i>De Lacte humano</i>
Alexander Rosa,	<i>De Carcinomate</i>

FROM WALES.

Lewis Evans,	<i>De Diabete mellito</i>
John Howell,	<i>De Amblyonibus.</i>

As we believe that the Regulations observed in the University of Edinburgh in promoting candidates to the degree of Doctor in Medicine are not sufficiently known, we have translated the Statuta Societatis, as lately reprinted from the minutes of the University, both that the public may be enabled to judge of the respectability of an Edinburgh degree, and that those at a distance may know the conditions upon which only it can be obtained.

I.—No person shall be promoted to the degree of Doctor in Medicine, except on one of two stated days in every year; viz. on the 24th of June, or 12th of September, or the days immediately thereafter.

II.—No person shall be received as a candidate, until he has applied during three complete years to the study of Medicine, in this or some other university, and has attended to all the branches of the science of Medicine; viz. Anatomy and Surgery, Chemistry, Botany, Materia Medica, and Pharmacy, Theory and Practice of Medicine, and Clinical Lectures delivered by Professors of Medicine on hospital patients.

III.—Whoever is desirous of obtaining a degree must deliver, before the 24th of March, or 12th of June, a medical dissertation, composed by himself, to some one of the Medical Professors, that he may peruse it, if necessary correct it, and affix to it a written testimony that he has perused it, with the date when he received it.

IV.—Then, whoever is desirous of a degree in medicine must communicate his intention to the Dean of the Faculty of Medicine, on or before the 20th of April or June, and at the same time deliver to him his inaugural dissertation, with the testimony of the Professor who perused it, to be subjected to the consideration of the Faculty of Medicine.

V.—After this, he is to undergo a medical examination by the Faculty, either *viva voce* or in writing, that no person may be received as a candidate who is not well acquainted with polite literature and the science of medicine*.

VI.—On the 18th of May, or 6th of August, the candidate shall, in an examination by two Professors, in the presence of the Faculty of Medicine, give a farther proof of his advancement in the various branches of medical knowledge enumerated above.

VII.—To the candidate, after having passed these trials, shall be proposed, by some one of the Professors, an *Aphorism of Hippocrates*, and, at the same time, by another Professor, a *Medical Question*; the former of which explained by himself, and illustrated by a commentary, and the latter, along with an answer to it, supported by proper arguments, he shall return to the Professors by whom they were proposed

* In a translation of these statutes, published in the Edinburgh newspapers, by order of the Senatus Academicus, on the 6th December 1763, to this regulation the following observation is annexed: "As the Professors think themselves bound in honour not to divulge the unfavourable result of an examination, a candidate may be permitted to his studies in this stage of his trials without injury to his reputation or interest."

posed on the 28th of May, or 11th of August, and shall defend his commentary, and answer before the Faculty of Medicine on the 30th of May, or 18th of August.

VIII.—If, by having duly fulfilled these conditions, the candidate shall deserve to be promoted, he shall receive from two of the Professors two histories of diseases, with questions annexed to them, for the purpose of writing an illustration of the one, and answers to the others. These histories, with the illustrations and answers, he shall deliver on the 12th of June, or 1st of September, to the Professor who proposed them, and defend them before the Faculty of Medicine on the 15th of June, or 3d of September.

IX.—After the candidate has been approved of at his first examination on the 18th of May, or 6th of August, he shall be permitted to send his dissertation to the press, and shall deliver eight copies, accurately printed, to the Dean of the Faculty of Medicine, on the 15th June, or 3d of September.

X.—If the candidate, after having printed his dissertation, shall be approved of by the Medical Faculty at his third examination, all these proceedings shall be reported to the Senatus Academicus by the Dean of the Faculty of Medicine, with whose approbation and authority he shall be ordered to publish his dissertation, and defend it in a meeting of the University on the 24th of June, or 12th of September, when, if the Senatus shall think fit, the highest medical honours, that is, the degree of Doctor in Medicine, shall be conferred on him with the usual solemnities, as the reward of his diligence and study.

XI.—To give greater solemnity to all these proceedings, the Faculty of Medicine shall always meet within the University on each of the above mentioned days, at nine in the morning. And if any candidate shall absent himself at the hour appointed, without sufficient reason, he shall not be permitted, on this occasion, to proceed with his trials, or obtain the degree of Doctor in Medicine.

XII.—All the above-mentioned exercises shall be performed in the Latin tongue.

ERRATA.

Page 258, line 28, for *faint colour*, read *faint odour*.

In the title to Mr Astley Cooper's case, in our last Number, we have designated him surgeon to *St Thomas's*, instead of *Guy's Hospital*. The name of the ingenious author of the seventh communication ought to have been spelt *Dr Rees*, and not *Dr Reeves*.

☛ Communications may be addressed to Mess. CONSTABLE and Co. Booksellers, Edinburgh; LONGMAN, HURST, REES, and ORME, London; or GILBERT and HODGES, Dublin.

* * * The Second Edition of No. I. was published in May, and No. IV. will be published on Tuesday, 1st October 1805.

P O S T S C R I P T,

Containing an Account of the *Discovery of the Composition of Muriatic Acid.* By PROFESSOR PACCHIONI of Pisa.

SINCE this Number of our Journal was completed, and indeed part of the impression sent to London, we have received a letter, dated 15th May 1805, from our valuable and eminent correspondent, Fabbroni of Florence, in which he says, "A brilliant discovery has been made by one of my friends. I have enclosed an account of it, which you will transmit to my respectable and dear friend Kirwan, after having communicated it to the philosophers of your country through the medium of your Journal." We therefore gladly take this means, though somewhat irregular, of complying with his request, and of giving to our readers the earliest possible notice of the discovery alluded to, by translating the pamphlet in which it is announced.

Lettera del Dottor FRANCESCO PACCHIONI, Professore di Fisica nell' Università di Pisa, al chiarissimo Sig. Auditore LORENZO PIGNOTTI, Consultore et Istoriografo Regio.

"To you, my much respected friend, both on account of the spontaneous impulse of innate kindness with which you deigned to take so much care of my talents, such as they are, as to receive me among the number of your pupils, and on account of your having paved the way for my obtaining that very chair which was filled by you for many years with so much applause and honour to our country, rather than to any other person, shall I give an account of a discovery which I have made and satisfactorily verified. But these are not the only reasons by which my conduct is influenced. I wish, at the same time, to show my gratitude towards you, and to give you a proof that I am endeavouring to render myself more worthy of your esteem and friendship.

"It is perfectly known to you that, since last year, on account of the premiums proposed by that excellent general and philosopher Bonaparte, Emperor of the French, for the advancement of that new and fertile branch of experimental philosophy discovered by the celebrated Professor of Bologna, Galvani, and afterwards wonderfully extended by the sublime genius of Volta, I have contrived a great number of experiments, which I have performed with much care, and almost completed. These experiments have revealed to me many facts, which I am collecting for a memoir to be presented to the *Società Italiana*; and have led me to a knowledge of the constituent elements of an acid which has hitherto proved refractory to all the

efforts of chemistry. I speak of the muriatic acid, hitherto tortured in vain * with the electric spark, caloric, and all the play of affinity. You are perfectly acquainted with the different and discordant opinions of the most recent and approved writers concerning the nature of this acid; some of them considering it as a simple combustible body, others as formed of an unknown base combined with oxygen, and, lastly, others as a simple substance naturally acid. But these opinions have not contributed to the advancement of science, and are justly esteemed as mere hypotheses destitute of proof.

Having, however, neglected these hypotheses, and considered the means by which the discovery of the nature of this acid has been hitherto attempted, it appeared to me that one had not yet been tried, viz. the continued action of the pile of the celebrated Volta, and I suspected that it might assist in leading me to discoveries which had hitherto escaped the research of experimental philosophers. As far as I can judge, my endeavours have been crowned with success, and have furnished me with satisfactory evidence of the nature of the constituent principles of muriatic acid.

The simplicity of the apparatus, and of the means adopted to attain my views, the care with which I endeavoured to avoid every source of error, have, I hope, sufficiently secured me against those illusions which frequently deceive young men ardent in the pursuit of science, and even those practised in the art of extorting from nature her secrets. Want of time prevents me from relating the series of experiments by which I arrived at the discovery I have mentioned; but you may see it by perusing the manuscript of my memoir, which will be immediately published, to submit my researches and their results to the judgment of the learned. For the present, I shall select from the experiments and facts therein described those which are decisive, and which establish, in an evident manner, the following truths:

I. *Muriatic acid is an oxide of hydrogen*, and consequently composed of hydrogen and oxygen.

II. *In the oxygenated muriatic acid, and therefore, a fortiori, in muriatic acid, there is a much less proportion of oxygen than in water.*

III. *Hydrogen is susceptible of very many and different degrees of oxidation*, contrary to what is universally believed by pneumatic chemists, who assert that hydrogen is susceptible only of one invariable degree of oxidation, that in which it forms water.

Having at first examined the phenomenon of the decomposition of water by the Galvanic pile, and having, by accurate experiments, ascertained the true theory, I readily discovered a very simple and exact apparatus, in which I could distinctly perceive the changes which happen to water, which, from the continued action of the Galvanic pile, is continually losing its oxygen at the surface of a wire of very pure gold immersed in it.

I therefore proceeded to examine these gradual changes of water thus losing its oxygen, and I at last observed a very singular fact, which unequivocally indicated the formation of an acid. In other antecedent

* Prof. Pacchioni could not possibly know that his discoveries had been in some measure anticipated by Mr Peel at Cambridge.

antecedent experiments, I had examined the nature of the air obtained before arriving at this remarkable point; and I always found, by means of the eudiometer of Giobert, that it was very pure oxygen*, as the residuum scarcely amounted to one sixtieth.

Having thus examined the nature of the air formed in various experiments from the first moment of decomposition, until there were evident indications of the formation of an acid, I began to endeavour to determine, in a more positive manner, the existence and nature of this acid.

When the water, or to speak more accurately, the residual fluid, occupied about half the capacity of the receiver, which at first contained the water, this residual fluid presented the following characters.

Its colour was an orange yellow, more or less deep, according as the bulk of the residual liquor was greater or less, and it resembled in appearance a true solution of gold.

From the inferior orifice of the vessel, which was closed with a piece of taffety, and then with double bladder, there escaped a *smell* which was easily recognised to be that of oxygenated muriatic acid.

The gold wire had in part lost its metallic lustre, and its surface appeared as if corroded by a solvent.

The bit of taffety which had been in contact with the coloured fluid, in consequence of its action, was easily torn, as is usual with similar bodies when half-burnt (*semicombusto*).

Around the edges of the vessel, on the bladder, there was formed a deep purple ring, which surrounded a circular space rendered entirely colourless, or white.

A drop of this fluid tinged the skin of the hand, after some hours, with a beautiful rose colour.

Having obtained, in various successive experiments, the same liquid, possessing constantly the same properties, I chose that obtained in the last experiment to subject it to chemical examination. The very able chemist of this university, Sig. Giuseppe Branchi, had the goodness to enter zealously into my views, and in his laboratory we easily proved,

1. The existence of a volatile acid by the white vapours, which were formed by ammonia placed near it.

2. That this acid was certainly oxygenated muriatic acid, since it formed in nitrate of silver a curdy precipitate, the *luna cornea* of the ancients, or the *muriate of silver* of the moderns. From these facts we may draw the following positive and undeniable results:

1. Muriatic acid is an oxide of hydrogen, and is therefore composed of hydrogen and oxygen.

2. Oxygenated muriatic acid, and of course muriatic acid, contains less oxygen than water does.

3. Hydrogen has not one degree of oxygenation, but many. One of these constitutes water, another below it oxygenated muriatic acid, and, below this, there is another which constitutes muriatic acid.

I

* In all experiments we are acquainted with, hydrogen gas was always evolved; but as we have no information concerning the arrangement of Prof. Pacchioni's apparatus, we cannot adduce this fact as conclusive against the accuracy of his experiments.—*Editors*.

I shall mention the other degrees in another memoir, which will be published immediately.

These, my much esteemed friend, are the decisive facts and experiments which exclude every doubt, and which confirm my fortunate conjectures. It is long since experimental philosophy may be said to have become a source of wonders. The transmutation of azote into nitrous acid, and of hydrogen into water, appear to me truly wonderful, and your genius will enable you readily to judge whether the same epithet may be applied to the metamorphosis of water into the true solvent of gold and platinum, into that volatile substance which attacks and neutralizes pestilential miasmata, and presents so many resources to philosophy and the arts.

After having thus discovered the elements of this refractory substance, I am engaged in determining their proportions by experiment and calculation.

To me it appears that the origin and nature of muriatic acid being now known, there is no longer any mystery in its formation, nor in that of the muriatic salts in the vast extent of the ocean. But these and other deductions will be explained by me in another place. They will have already occurred to you, and I should exceed the limits of this letter, if I were to enter farther into the subject. With the most profound esteem and sincere attachment, I have the honour of subscribing myself

Your much obliged servant and friend,

Pisa, 9th May 1805.

FRANCIS PACCHIONI.

Contrary as the results announced in this interesting communication are to analogy, there are some facts from which they receive at least such a degree of confirmation, as to entitle them to the attention of every one zealous in the cultivation of science. In 1801, Mr Cruickshank discovered that infusion of litmus was reddened by the one end of the pile, and infusion of Brazil wood rendered purple by the other; but he supposed these effects to be owing to the formation of nitrous acid and ammonia; and only a few days before Prof. Pacchioni's letter was published at Pisa, the formation of muriatic acid by the Galvanic action was announced in London *, in a letter from Mr Peel, dated Cambridge, 23d April 1805; from which, in justice to our countryman, and in confirmation of the general fact, we extract the following passages.

"I took about a pint of distilled water, and decomposed one half of it by means of Galvanism, the other half I evaporated, and I found to remain at the bottom of the glass a small quantity of salt, which, upon examination, proved to be muriate of soda.—The salt could not have been contained in the water before I made the experiment, because I used every precaution to have it free from impurities. I even took the trouble to repeat the experiment, though a tedious one, and I again obtained the same result.—A friend of mine just informs me that he has tried my experiment, and has succeeded in procuring the salt."

* Philosophical Magazine for April 1805, p. 279.

THE
EDINBURGH
MEDICAL AND SURGICAL JOURNAL.

OCTOBER 1. 1805.

PART I.
ORIGINAL COMMUNICATIONS.

I.

Case of Hepatitis followed by bilious Expectoration. By ALEXANDER MONRO, Jun. M. D. F. R. S., Professor of Anatomy and Surgery in the University of Edinburgh.

MR M——, a stout young man, 22 years of age, having been exposed to cold during the night, after severe military duty *, was seized with the usual symptoms of hepatitis, which, though apparently slight, were soon followed by those of suppuration. He had a constant tickling cough, accompanied with a difficulty in breathing, and sense of oppression at his breast, though without pain, except what the cough sometimes excited.

In a few days, he began to expectorate, and in considerable quantity, a viscid, purulent mucus, which, the day following, was found to be mixed with a fluid like the washings of raw flesh, and also with a fluid resembling bile in colour, and of a bitter taste.

Mixed with the fluid discharged by expectoration, there were also a number of small hard masses, some of which were like very small portions of the liver, others like pieces of cartilage.

The symptoms were at first much relieved by the expectoration.

VOL. I. NO. 4.

D d

tion,

* It may not be improper to add that this gentleman carried the colours of the regiment, and imputed his complaint to his having supported the end of the shaft of the colours upon his right side.

tion, but recurred in about an hour, and again gave way, upon a copious expectoration coming on.

The patient, before the expectoration, complained of a bitter taste in his mouth; the sense of oppression was increased; his respiration became quicker, and was accompanied with a wheezing noise, which, to make use of the patient's own simile, was like air passing quickly through a fluid.

The quantity expectorated was different at different times; it was increased from eating, and remarkably so an hour or two after dinner, when the cough was at times so severe as to induce vomiting.

The expectoration was also increased by eating soup, or any kind of vegetable; also from drinking wine or spirits.

All his complaints were aggravated by costiveness.

His sleep was greatly disturbed and interrupted, from the necessity he was under of getting up every two hours during the night to expectorate. The quantity discharged by coughing during the night being commonly equal to what he spat up in the course of two mornings. The whole quantity in 24 hours was from 10 to 15 ounces.

He suffered great oppression when lying on his back; his easiest posture was when his head and shoulders were considerably raised, and his body inclined to the right side,

There was not any perceptible enlargement of the liver.

Though his indisposition confined him to his room, his appetite was tolerably good, and, except occasional flatulency and costiveness, he had no symptom of dyspepsia.

His stools were natural as to quantity, but of a clay colour. His urine, during the paroxysms of fever, oppression, &c. was in small quantity, of a high colour, and deposited a pink sediment.

His eyes and skin never had the slightest tinge of yellow. His pulse was commonly from 80 to 100 in the minute, and, from all accounts, had been more frequent at the first, than during any of the subsequent attacks of the disease.

The preceding is a description of the symptoms of the complaint at the beginning, and in the months of September and October 1799, during which period he took calomel and other purgative medicines, and he thinks with advantage; although he does not impute his recovery to the operation of any medicine, the disease having ceased rather suddenly, and without any apparent cause. For nearly two years, he enjoyed tolerable health, with the exception of a slight relapse, which continued only one or two days.

In the month of March 1801, after eating apples, and drinking a considerable quantity of punch, his complaint returned,
and

and continued for about two months, and again yielded to the use of purgatives. The spring following it again returned, and without any obvious cause, continuing for six weeks.

About the end of October 1804 he had a fourth attack, which he imputed to catching cold; and this last continued until the month of April, when he left Edinburgh.

OBSERVATIONS ON THE PRECEDING CASE.

The hepatitis, or inflammation of the liver, a disease so frequent in tropical climates, and the great endemic of the peninsula of India, is one that rarely occurs in this country, or indeed in Europe.

When we meet with it, it is commonly only a partial inflammation, as in the preceding case, terminating in a partial supuration of this bowel. The matter formed, after some time, usually makes its way through the ductus communis choledochus into the intestines, and is evacuated by purging; sometimes the abscess bursts into the stomach, or the matter is discharged by vomiting; or the abscess bursts into the cavity of the abdomen.

Persons who have suffered one attack of this kind are generally subject to returns, which sometimes terminate fatally, in a hepatic hectic.

The most remarkable circumstance in the preceding case, and as such chiefly claiming our notice, is the matter of the abscess having made its way through the diaphragm into the lungs, and having been evacuated by expectoration, or through the trachea.

Of this, I believe, there are few examples; and it can indeed only happen when the abscess is formed in that portion of the liver which is contiguous to the diaphragm, or when an adhesion had previously taken place in consequence of inflammation or tubercle.

The preceding case affords an example of the following very remarkable, and, I believe, very unusual facts.

1st; That the matter of an abscess in the liver, sometimes makes its way through the diaphragm into the air vessels of the lungs; and does not prove immediately fatal.

2^{dly}; It is obvious from the quantity of bile expectorated, and clay colour of the stools, that all the branches of the hepatic duct communicated directly or indirectly with the abscess; while, at the same time, there existed some cause, which had, on many occasions, though not constantly, prevented the bile from passing downwards into the duodenum.

Sdly, The bile being discharged by expectoration, explains the cause why this patient had not jaundice.

The purulent matter found within abscesses of the liver is commonly extremely viscid, resembling purulent mucus, which explains the appearance of the matter expectorated; besides, as this was discharged through the trachea, it was necessarily mixed with more or less mucus in its passage. In the treatment of this disorder, little more can be done than to endeavour to palliate the most urgent symptoms.

Small doses of calomel were prescribed, partly with a view to its stimulant effects upon the intestines, partly with a view to its deobstruent property; as, perhaps, by such a medicine, any tumour or induration in the substance of the liver, or neighbouring parts, which prevented the free flow of bile through the smaller biliary ducts, or ductus communis choledochus, might have been removed.

It seems to me not improbable that the spreading of the ulceration through the substance of the liver might have been the cause of the patient's relapse, and especially as the disease returned, upon his being exposed to those causes which originally induced the disorder, or from taking such articles of food or drink as are well known to aggravate or renew it, especially in those, who, at any period of their lives, have had hepatitis.

Although, from the appearance of the fluid expectorated, there could be little doubt of its containing bile, I was desirous of having the fact ascertained by chemical analysis, and, with that view, sent a quantity of it, without mentioning its origin, to Dr Duncan, jun. from whom I received the following account of some experiments to which he subjected it.

“The fluid which you sent me for analysis was not homogeneous, but consisted of small white particles, fibres, and a few larger masses like cartilage which has been long macerated, enveloped in a glairy fluid of a yellow colour, as if tinged with bile. Its smell was unpleasing, and somewhat sweet, like that of honey. It was the most glairy fluid I ever saw, not excepting the white of egg. On attempting to lift a portion of it in a spoon, the whole was drawn back into the basin, by its cohesion with what remained; and it was with the greatest difficulty that a little of it could be poured out of a proper vessel. I endeavoured to separate the solid particles from the fluid by means of filtration, but even after it was well beaten with water, to destroy its tenacity, it did not pass through a paper filter.

“When perfectly recent, it did not change the colour either of turmeric or litmus, but, in a very few hours, it reddened the latter;

ter ; and in this state were my experiments performed upon it. When kept for a length of time, it gradually separated into a transparent brown fluid, and yellow opaque sediment, and became very slowly, but, at last, highly putrid ; and, in consequence of these changes, lost its remarkable glairiness.

“ Its resemblance to white of egg induced me to suppose that it consisted chiefly of albumen ; but I was mistaken, for it did not coagulate on being heated to ebullition. It, however, underwent some change, for its remarkable cohesiveness was completely destroyed. Neither did it consist chiefly of gelatine ; for, on being considerably evaporated, and allowed to cool, it did not gelatinize. During the evaporation, a brown pellicle formed on its surface, resembling those which form on solutions of extractive, when exposed to the action of heat and air. When evaporated to dryness, it formed a yellow semitransparent mass, somewhat deliquescent.

“ It was difficultly diffusible through cold water, by agitation, but more readily through boiling water. It did not, however, form a perfect solution, but remained milky, with a little flocculent sediment.

Sulphuric, nitrous, and muriatic acids first coagulated it, the coagulation passing successively from a bright yellow through a series of colours, green, blue, and purple, and then dissolved it into a yellow or green turbid fluid. During the action of sulphuric acid, a pungent smell, resembling acetic acid, was distinctly perceived. These acid solutions were decomposed by water and alkaline solutions ; and the precipitate in both cases was redissolved by adding alkali in excess.

“ Diluted nitrous acid, acetic, oxalic, and oxymuriatic acids coagulated it without redissolving the coagulum, which was, however, soluble by excess of alkalis.

“ Solutions of alkalis, and of alkaline carbonates, readily dissolved it into a slightly turbid yellow fluid, which was decomposed by acids.

“ With solutions of acetite of lead, nitrate of lead, muriate of tin, nitrate of mercury, muriate of mercury, sulphate of zinc, sulphate of copper, and nitrate of silver, it formed coagulum, more or less consistent, and of various shades of yellow or green.

“ With infusion of galls it formed a white coagulum.

“ When diffused through a large proportion of water, the filtered solution was precipitated by infusion of galls, and all the acids. Had its colour heightened, and transparency increased, by the alkalis, and alkaline carbonates ; was not precipitated by muriate of mercury, or sulphate of zinc ; was slightly precipitated by alcohol, acetite of lead, nitrate of lead, sulphate of cop-

per, and muriate of tin, and very copiously by nitrate of mercury.

"It was converted into a white ropy coagulum by alcohol, which acquired from it a yellow colour.

"The tincture lost its transparency when mixed with water; had its colour heightened by potash and ammonia; was precipitated by barytic water, and very slightly by tincture of galls. With sulphuric and muriatic acids it formed a turbid green fluid; with nitrous acid, a reddish orange fluid; and with oxalic and oxymuriatic acids, a turbid, whitish, grey fluid; with muriate of mercury, acetite of lead, muriate of tin, and sulphate of zinc, it formed a white, and with nitrate of lead, and sulphate of copper, a green or blue precipitate. With nitrate of mercury it formed a very copious white, curdy precipitate.

"Water in which the coagulum of the tincture was agitated, showed slight indications of animal matter, by forming precipitates with tannis, acids, and metallic solutions."

"From these experiments, I think we may conclude that the yellow colour of the fluid was owing to the presence of the resin of bile, as I know of no other substance which undergoes similar changes of colour by the action of acids and it. But with regard to the nature of the principal mass of the fluid, I am not so certain; and, unfortunately, I had not an opportunity to repeat my experiments after I had read Dr Bostock's paper in the last Number of this Journal. That it did not principally consist of albumen was evident from its not coagulating by heat, and from no precipitate being formed in it when dissolved in water and filtered, by muriate of mercury. That it did not principally consist of gelatine was also evident, from its not being precipitated by the alkaline carbonates, from its being powerfully coagulated by most metallic solutions, and from its not gelatinizing on evaporation and cooling. That it did not consist principally of pus was evident from its physical properties, its semi-transparency, and remarkable cohesiveness. It differed from mucus chiefly in being precipitated by infusion of galls; but as this may have been owing to the admixture of gelatine, I am inclined to think that it consisted principally of mucus, which is sometimes secreted in very large quantities, and very ropy, as in cystitis, and some varieties of diarrhea."

H.

Account of a peculiar Structure of the Membrane lining the Urethra, and of two supposed Hermaphrodites. By JOHN BARCLAY, M. D. Lecturer on Anatomy.

LAYING open the urethra of a man from the side of the corpora cavernosa penis, and observing the orifices of two lacunæ, which struck me, as somewhat larger than ordinary, I applied the point of a blow-pipe to one, to see how far it would admit the air. On impelling the air with a slight degree of force, it entered the cells of the thin membrane lining the corpus spongiosum urethræ, and exhibited these cells as a kind of irregular vessels or canals. To preserve the appearance which had thus been produced, I withdrew the blow-pipe and injected mercury, and observed distinctly, that though many of the cells communicated laterally, yet none of the injection flowed out through the cut margin of the urethral membrane, nor entered the cells of the corpus spongiosum, nor any of the venous or arterial vessels; that the cells, however, must have opened laterally into the cut edges of the membrane is evident, and the escape of the mercury through its lateral passages was in all probability prevented only by the retraction of the membrane itself. As the injection in this instance, however, furnished no proof of a communication, where certainly a communication existed, I was not authorised to deny a connexion between these cells and those of the corpus spongiosum urethræ, and more especially when I recollected that the communication between veins and arteries at their extremities cannot always be demonstrated, even by the minutest injections. The success of injections depends upon a variety of circumstances; and we proceed on a rash hypothesis when we imagine that our injections flow in the dead as freely and minutely as the different fluids in the living body. Immediately after the death of a dog, I have often injected the lymphatics of the cord from the spermatic artery without any appearance of rupture that I could perceive; on plunging a dog into warm water as soon as he was killed, I have likewise succeeded in throwing even a coarse injection from the arteries into the veins; and have still a preparation of a Sapajous ape, killed and injected in similar circumstances, where all the veins of the sacral extremities, many of the pelvis, and the vena cava, to the place where it receives the emulgents, were completely filled from throwing the injection sacrad into a part of the abdominal aorta.

In these instances, the event, were I to reason from experience, would have been different had I allowed the animals to cool, and tried the injection a day or two after.

But although the injection in the case of the urethra neither flowed through the edges of the membrane nor into the cells of the corpus spongiosum, it flowed freely through the orifice of a lacuna, near the proximal extremity of the penis. Into this lacuna I likewise introduced the injecting pipe, but could not make the mercury flow with the same ease from the proximal to the distal as I had done from the distal to the proximal extremity; this seemed to imply, that in the communication between the cells there was something that performed an office resembling that of valves, though the difference of appearance, and the size of the lacunæ by which they opened at both extremities into the urethra, prevented me from concluding that they were lymphatics, in either a natural or diseased state.

The preparation which I preserve is considerably disfigured from drying, and from the escape of the mercury; but the drawing, which was done by Mr Anthony Stewart, an ingenious artist, represents the appearance with great accuracy.

A, a, are the two lacunæ at the distal extremity: *a*, the lacuna by which the mercury was first thrown into the cells: *c*, the lacuna by which it flowed out at the proximal extremity, and which was afterwards secured by a ligature: *b*, marks the place where one of the cells was ruptured, and which was likewise secured by a ligature: *d, d, d, d*, are the cut edges of the corpora cavemosa penis; the cut edges of the corpus spongiosum urethræ could not be distinguished from them, or had receded behind the membrane.

I have repeated the experiment on several other urethræ since, and have often failed; where I succeeded, I have found the canals considerably different in different individuals; and been led to conclude that this difference in structure, whether original or contracted by disease, has contributed not a little, with a difference of constitution, &c. to vary the nature of strictures and gonorrhæas, as well as the effects which result from the introduction of bougies.

The other facts which I have to mention, relating to the unusual structure of the urinary organs, were what I observed in a lamb and a pig: these animals were sent to me as complete hermaphrodites, and therefore supposed to be great curiosities. On examination, I found they were both males. The urethra of the lamb terminated in the perineum, by an orifice somewhat similar to that of the female, and beyond this orifice the penis was imperforated. The urethra of the pig likewise terminated in the
same

same place, and in the same manner, but there was no penis. The testes were only partially in the scrotum, and the vasa deferentia of the usual size, where they left the testis, gradually tapering as they reached the pelvis, became at last as small as a hair, and approaching one another, totally disappeared on the dorsal aspect of the urinary bladder, in the doubling of a thin transparent membrane, which was evidently a fold of the peritoneum, extending dextrad and sinistrad, like the ligamentum latum uteri, representing the form, and occupying precisely its situation, but not connected with any kind of organ resembling an uterus, ovaria, fallopian tubes, or ligamenta rotunda.

Edinburgh, 8th July, 1805.

III.

Case of a Bony Tumour, successfully extracted from the Orbit of the Eye. By THOMAS LUCAS, Surgeon, Stirling.

A. D. a farmer's daughter, 28 years of age.

1st October, 1802. Covered with the upper eye-lid of the left eye, there is a very hard tumour, of an oval form, and rather flat, somewhat more than an inch in its perpendicular diameter, and extending horizontally, about an inch and a half in length, from the inner angle of the orbit towards the eye-ball, which is displaced. It seems to occupy the greater part of the socket, and has forced the eye itself forwards and outwards, so that the eye hangs pendulous and loose, and apparently entirely beyond the exterior edge of the outer angle of the orbit. The optic nerve and muscles must be considerably elongated, perhaps nearly an inch. She can still, however, discover objects with this eye, although its sight is much impaired; and she complains of little pain from the tumour, even when pressed or handled pretty freely.

On the 25th of February she had received a blow from a cow's horn on the upper and inner angle of the orbit of the left eye, nearly on the transverse suture; but as it inflicted no wound, and the pain soon subsided, it was considered merely as a slight contusion, and little attention was paid to it. About the beginning of March, however, there was discovered, on the spot where the blow had been received, a small hard tumour, which increased gradually to its present size, but with very little pain, and

and no interruption to her general state of health, so that she continued her usual laborious employments about her father's house. She has consulted several gentlemen of the faculty in Glasgow, and in other parts of the country, who gave her no satisfaction concerning the nature of the tumour, and declined attempting any thing for her relief.

2d October. Being certain that the examination would be attended with no danger, but might be productive of good consequences, I resolved to ascertain the nature of the tumour, which, although hard, appeared somewhat loose. With this view, I made a horizontal incision through the upper eye-lid, about an inch in length, along the greatest diameter of the tumour, which, on separating, and raising the edges of the wound, was discovered to be a solid piece of bone, covered only with the common integuments, and a thin membrane somewhat resembling periosteum, and to which it was but slightly attached. No part of the bones of the orbit was denuded; and although the manner of its adhesion to the neighbouring parts could not be ascertained, the tumour remained firm and immoveable, notwithstanding considerable efforts were made to loosen it, and bring it away.

The wound made by the incision did not heal up, but continued nearly of its original size, discharging a small quantity of thin matter, neither purulent nor fetid. The bone continued to increase in size; the eye was still more pressed out of its natural position, though some degree of sight still remained in it, and the girl continued in perfect health. At length, towards the end of September 1808, the bone becoming carious, and evidently loose, and protruding somewhat forwards, I endeavoured to extract it by making, with a small scalpel, an incision round the edges of the former wound, to detach it from any adhesion at its orifice, and by taking firm hold of it with a pair of strong forceps. The first attempt failed, but a second, made some days afterwards, succeeded; and I extracted, without much exertion or difficulty, a piece of bone, of an oblong shape, weighing an ounce and two drachms; an inch and a half in length, and two inches, five eighths, in circumference; hard, solid; and pretty smooth.

The extraction of the bone was followed by no hemorrhagy; a few drops of blood only were discharged from the edges of the wound. The cavity from which it was extracted was found to be lined with a strong membrane, quite smooth on the upper and inner sides, but somewhat uneven on the side next the ball of the eye. No perforation or communication with any of the surrounding parts could be discovered in it; when examined both with a probe and the finger, little irritation or pain was produced,
and

and the bone had evidently no connexion or adhesion with any bone adjoining to it.

The lips of the wound soon healed, but could not be got to cicatrize, and its size is diminished to about half an inch in diameter; but the cavity still extends in a straight direction backwards to two inches in depth. A little lint and bit of silk are worn over it to hide the deformity, and every time the dressing is removed the inside of the cavity is covered with a slight exudation. The eye-ball has in a great measure recovered its natural situation, and seems still to encroach on the cavity which contained the bone, although for some months past its progress has been but small. She has completely recovered the sight of the left eye, which is now equal to that of the right, and is scarcely more affected by fire or candle light, or by looking steadfastly at any object; the only perceptible difference being, that it begins to water first. She has no headach or any material complaint; has married since the bone was extracted, and is now the mother of a fine child, which she nurses herself.

March 4. 1805.

IV.

Analysis of the Bone extracted in the preceding Case. By ANDREW DUNCAN, jun. M. D.

THE accurate analysis of morbid structures and secretions is always interesting, as tending to increase our knowledge of the animal functions connected with their formation. It often enables us to correct the conclusions concerning their nature, which we are apt to deduce from the consideration of their external characters alone; thus the chalk stones of gouty people, long considered as carbonate or phosphate of lime, we now know to be urate of soda; and urinary calculi are now ascertained to be exceedingly diversified in their composition. However much, therefore, any morbid secretion may resemble a substance whose composition is known, we are not entitled to consider it as the same, unless our conjecture be confirmed by chemical analysis. It is usual for anatomists to talk of ossification of the heart and arteries, of the conversion of soft parts into bone; but, so far as I know, their assertions rest entirely on similarity of appearance. I was therefore anxious to embrace the present opportunity of ascertaining the fact, and on intimating my

my desire to Mr Lucas, he, with the greatest liberality, sent me the bone for that purpose.

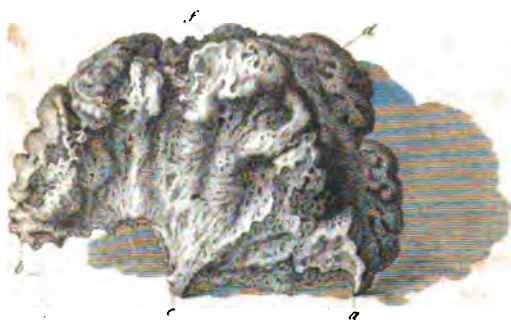
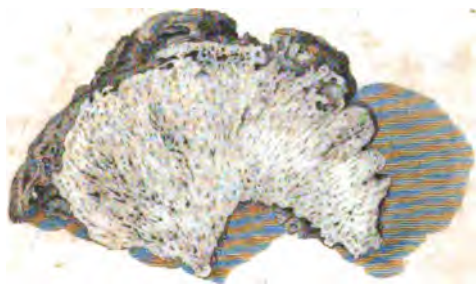
Its shape was extremely irregular, but somewhat resembled a wedge cut out of a sphere. Its longest diameter, *a, b*, forming the sharp edge of the wedge, was two inches in length; the greatest length of the sides was one inch $\frac{4}{5}$; the greatest breadth of its convex back, *d, f*, was one inch $\frac{1}{5}$. The back of the wedge, although extremely irregular and studded with processes, was in general smooth and polished, but in some parts, especially where it was dermal, it had a curious appearance. The sides were much less uneven, but in no part had a smooth or polished surface, and resembled those parts of bone to which cartilage, ligament, or membrane is firmly attached, being full of small pits or depressions, and rough, as if corroded by the action of a caustic fluid. In no part, after the most careful examination, did it shew any appearance of fracture, and therefore could not have been an exstorsis. The position of the bone in the orbit, may be thus described in Dr Barclay's precise and well contrived anatomical language. Part *a, d*, of the convex back of the wedge, had a mesial aspect; the remaining part, *d, b*, was dermal, and covered with the upper eye-lid; the irregular edge of the wedge *a, c, b*, had a sinistro-lateral aspect, and rested upon the displaced eye-ball, and the sides of the wedge were concave, the one had a glabellar, and the other, which is represented in the engraving *a, c, b, e*, had a glabellar aspect.

Its weight (on the 18th April 1805), was 887 grains; the diminution being undoubtedly owing to perfect exsiccation, especially of some blood and soft matter which still adhered to it. Its specific gravity was 2, being almost exactly the same with that of a dried portion of the human femur after all the cancelli were removed. Its colour was yellowish white; its saw-dust was snow-white. It was extremely hard, and its hardness, to use the expression of the mechanic who cut it, was sharper, while that of the femur was tougher. When cut, its internal texture was found to be nearly uniform, somewhat like that of ivory, being very slightly marked with the appearance of radii, extending from the middle of the edge to the convex back of the wedge. It admitted of being polished like ivory.

Its saw-dust was boiled in distilled water. The decoction formed a copious precipitate with infusion of galls, a very slight precipitate with acetite of lead, and was not changed by muriate of mercury, (corrosive sublimate.) The water had therefore extracted a notable proportion of gelatine.

When immersed in diluted muriatic acid, there was at first considerable effervescence, which gradually decreased. In proportion

MR LUCAS'S CASE.



View of the same.

Engraved for the Edinburgh Med. Journal N.º 4



portion as the solution advanced, the remaining bone acquired a pink hue, and when the action of the acid had completely ceased, there remained a red cartilage, retaining the form of the fragment of bone operated on, exhibiting no particular structure, and having a certain degree of firmness. On being dried it shrunk very much in size, and was converted into a semitransparent brown hornylike substance. The muriatic solution gave a copious white precipitate with water of ammonia, and afterwards a slight precipitate also white, with a solution of carbonate of ammonia. A piece of well-dried femur treated in the same manner, exhibited nearly the same phenomena. The principal difference was in the appearance of the cartilage, which was evidently less in quantity, and much less firm in consistence. This analysis gave the following proportions:

	<i>Femur.</i>	<i>Praternat. Ossification.</i>
Cartilage,	4. 6	7. 8
Phosphate of lime,	87. 5	82. 4
Carbonate of lime,	7. 9	9. 8
	100.	100.

It is perhaps necessary to mention a source of inaccuracy in this analysis, that others engaged in similar inquiries may avoid it. The precipitated phosphate of lime, on being dried, did not become opaque and white, like chalk, which it always does when pure, but assumed a semitransparent horny appearance, indicating the presence of a certain proportion of animal matter, which had been dissolved in consequence of the muriatic acid not having been sufficiently diluted, and the solution phials having been accidentally exposed to the heat of the sun during some very hot weather. At the time, the action of the acid on the animal matter was indicated by the solution, which till then had been colourless, acquiring a reddish tint. As this error, however, affected equally both analyses and solutions, it appears that the substance extracted by Mr Lucas did not differ in composition from the piece of femur more than what might have been expected, the one being an adult bone, the other formed in the space of about nineteen months; and that, therefore, true bony matter may be formed in situations where it never occurs naturally, and by the action of vessels which never secrete it in a state of health.

V.

Drawings, with the Description of an Instrument for extracting Polypi from the Nose. By WILLIAM ROBERTSON, one of the Surgeons to the Kello Dispensary.

WHEN an operation is the only resource left to relieve the complaints of the distressed, the method of performing it with facility and least pain, is of the greatest importance to the sufferer. I have therefore sent you the drawings of an instrument which I have been in the habit of using for extracting the polypus from the nose, for a number of years, with great success.

Plate I. Fig. 1.—Is a piece of harpsichord wire, bent into a proper form; it may be used either single or double and twisted.

Fig. 2.—Represents the form of the instrument, which may be either of silver or steel; it ought to be about four inches in length altogether, quite round and small, not much thicker than a common probe; as much is to be left projecting at the top, on each side, as to admit of two small holes to be drilled exactly opposite to one another, with only the breadth of the shaft of the instrument betwixt them. It should be polished in the smoothest manner; other two holes must be drilled opposite to one another in the bead marked C, which ought to be distant more than two inches from the top, in a direct line with the former holes marked B; the letter E marks a slider; the letters D. D. mark two small holes drilled in it, corresponding with those above B. C.; all betwixt the bead and the ring marked E, is a square for the slider to run upon the foot; the instrument is screwed or rivetted into the ring after the slider is put on.

Fig. 3.—Represents the instrument armed; one of the ends of the wire Fig. 1. to be put down the hole marked the letter B, then carried through the hole in the bead marked C, from thence through that in the slider marked D, and passed through the different holes in the slider, so as to secure it from slipping during the time of the operation; the other end to be passed down from the top in the opposite side in the same way, leaving as much as to form the noose at the top marked A; and this may be enlarged or diminished according to the size of the polypus or the nostril it has to enter. I generally find an oblong form the best, taking great care to secure the ends of both wires by means of the holes in the slider. When the noose is formed, and the slider pushed up close to the bead, the instrument

ment is then ready for the operation. The patient is to be placed in the sunshine, or in a clear light, desiring him to force his breath through his nostrils, which has the effect of pushing the polypus down its full length; then taking the instrument in the right hand, holding it below the slider, so as to keep the slider close to the bead, then running it flat ways up the *ala nasi*, or *septum nasi*, till the top of the instrument at the lower end of the noose touches the most depending part of the polypus; then push the top of the shaft up the opposite side as high as the root of the polypus, you now have it enclosed within the noose, keeping it steady in that situation; then taking hold of the ring at the end with the left hand, and pulling down the slider with the right till it has a firm hold of the polypus, then bring all away at once; or, if it is thought more eligible, the slider may be drawn from time to time by tying it down to the ring, so as to cut through by degrees; but I have never seen any hemorrhagy arising from pulling it away all at once, to give any alarm; if it is intended to be pulled away at once, a twisted wire is the best, as it does not cut the polypus so readily, and is apter to pull it from the root.

I have been in the habit of using this, or an instrument in many respects similar, for the space of ten years, and during that time have extracted a good number, though often a complaint difficult and troublesome to eradicate; very few whom I have operated upon have had any return of the complaint. I generally inspect the bottom of the nostril by the assistance of the sunshine, and if there is any appearance of a root remaining, I pass a piece of lunar caustic, fixed upon the end of a wire, up through a small glass tube, and touch the part repeatedly; or throw up a weak solution of sal ammoniac by means of a syringe, and confine it in the nostril for a few minutes. Some I have extracted so large as to weigh three drams and a half; and, not above a fortnight ago, I extracted one which weighed two drams and five grains. The superior advantage of these instruments over the forceps and double canula in common use, is their occupying such a small space, since, when neatly made, the upper end ought not to equal twice the size of the end of a common probe; which is of the greatest importance when applied to such an irritable part as the membrane of the nose.

VI.

Case of a Blue Girl, with Dissection. Communicated by ALEXANDER MARCET, M. D. one of the Physicians to Guy's Hospital.

TO THE EDITORS OF THE EDINBURGH MEDICAL JOURNAL.

GENTLEMEN,

DURING a course of clinical lectures, at Guy's Hospital, last spring, I had the opportunity of noticing one of those singular instances in which the skin, all over the surface of the body, becomes tinged of a purple colour, in consequence of internal disease. The patient died, and the examination of the body offered some uncommon and unexpected appearances. One of the Editors of your Journal having heard of this case, expressed a wish that I should send you an account of it; and this I have now the pleasure of doing, more with a view to comply with his request, than from an idea that it will be found sufficiently interesting for your valuable publication.

Eliza Mitchell, a girl 21 years old, of middle stature, and of a thin spare habit, was admitted as a clinical patient, on the 3d of April last. She had been for some time before under the care of Dr Buxton, who favoured me, immediately on her admission, with the following account of her complaints :

“ Since her infancy she has been subject, during the winter, to a little cough, and to some degree of dyspnea, which, however, were never sufficiently severe to hinder her from performing her work as a maid servant; and, when most severely affected, neither her face nor any other part were at all of a purple colour. In other respects she was free from complaint, till the present attack.

“ Last August she happened to get wet through, during the time of menstruation. Previous to this she had had a slight degree of cough and dyspnea; but afterwards shivering fits came on; her cough and shortness of breath became worse, and were accompanied by considerable pain in her chest. These symptoms were relieved by blisters and other means. She continued her usual employment till seven weeks ago, although her health gradually became worse and worse. The catamenia had not appeared till last August, nor have they appeared since.

“ The

"The principal complaints which she now makes are, a wheezing cough, which occurs very frequently, but is not strong, apparently from her wanting strength to cough out; great shortness of breath, which is in some degree relieved when she sits up; very great prostration of strength; loss of appetite. She does not expectorate much, nor does she complain of pain in any part. Her hands and legs are oedematous. Her colour, in every part, is purple; but this is more peculiarly conspicuous in the hands, the lower part of the legs, the feet, and face. Her mother says, that the swelling and purple colour came on in one day, about seven weeks ago, and that she had previously complained of no peculiar symptoms. She is very thirsty. Bowels open. She generally dozes almost the whole day, but is very restless at night. She can lie best on her back, when her head and body are raised. She can, however, also lie well on the right side, but scarcely at all on the left. Her legs feel cold, both to herself and to those who touch them. The other parts of her body are of the usual warmth. Pulse 120, and appears regular; but it is extremely weak and small, and is hardly perceptible at the wrist. She has been under medical treatment, during the last seven weeks, without the least benefit, and has now a sore mouth, in consequence of mercurials which have been given."

Immediately at her admission into the hospital, a blister was applied to the chest, and an attempt was made to promote the secretion of urine, and relieve her breathing, by various diuretics. The next day I made the following report:

"The colour is still more conspicuous than yesterday, and in the hands particularly; it is such as could scarcely be exceeded by any purple paint. It is, however, not near so intense on the trunk of the body. She lies on her back, with her head and body raised, and answers questions sensibly, though in a very faint voice; and any attempt to speak seems to be a very painful exertion to her. Her breathing is extremely quick, but feeble; and the contractions and dilatations of her chest are scarcely perceivable. Her pulse is not to be felt at either wrist, and cannot be counted in any of the arteries. She says she is perfectly free from pain, and complains only of excessive shortness of breath. The blister has risen well, but she has had no passage in her bowels since yesterday, and has made but a small quantity of urine."

She died a few hours after this report. Soon after death, the blue colour of the body gradually diminished, and the next day it had almost entirely disappeared.

The body having been opened, and the dissection carefully conducted by my colleague, Mr Astley Cooper, we observed the following appearances, which were immediately recorded :

ABDOMEN.—About half a pint of water was found in the cavity of the abdomen.

The liver had been slightly inflamed, and had contracted morbid adhesions to the peritoneum.

The vessels of the coats of the stomach and intestines were turgid with purple blood ; but, in all other respects, the abdominal viscera were found.

THORAX.—The pericardium contained about an ounce and a half of water.

The heart seemed somewhat enlarged, more completely filling the cavity of the pericardium than usual. In both sides it was turgid with blood of an extremely dark hue, and its coronary vessels were distended with blood of the same colour.

There was no unnatural communication whatever between the cavities of the heart, and its valves were all in a perfect and natural state.

The lungs adhered every where to the inner surface of the chest, to the diaphragm, and to the pleura covering the pericardium. These adhesions were some of them of long standing, others just forming ; and these last were composed of large quantities of coagulable lymph, having the appearance and texture of jelly, and exhibiting signs of incipient organization.

The lungs seemed distended with an unusual quantity of dark-coloured blood, but were free from tubercles, or any other appearance of disease : their substance seemed rather more compact than usual, particularly in the left lobe ; but still it did not sink in water.

The result of this dissection having proved very different from that which was expected, I may perhaps be allowed to indulge in a few remarks on the subject. Instead of an organic disease in the heart, of which we had scarcely entertained any doubt, we found that organ sound, and the symptoms appeared to have originated in a cause totally independent of this. They were evidently the consequence of a process of inflammation on the surface of the lungs, which had produced adhesions to a remarkable, and, I believe, very uncommon extent. These adhesions were such, indeed, as to have obliterated all appearance of cavity in the pleura ; and this so greatly impeded the progress of respiration, that the whole of the circulating fluids had been gradually brought to the state of venous blood, which produced the appearances above described.

It may not appear clearly at first, why adhesions of the lungs to the pleura and diaphragm should prove such an essential obstacle to the respiration, since, whether there are such morbid adhesions or not, the lungs must always follow the chest and diaphragm in their contractions and dilatations. But if it be considered that, in the mechanism of respiration, the lungs, in order to adapt themselves to the shape of the chest, during its contractions and dilatations, must slide some way over the pleura, so that each point of the surface of the lungs, in their collapsed state, must correspond to a different point of the pleura in their state of dilatation, it will easily be conceived how materially such a general state of adhesion must interfere with the process of respiration. Indeed, as I have mentioned before, our patient, on the morning of her death, seemed hardly to breathe at all. In confirmation of this, it may be observed, that whenever partial adhesions take place in the lungs, there is always more or less difficulty of breathing; and it is generally found, after death, that the coagulable lymph, or matter of adhesion, has been stretched some way into a kind of membranous band, sometimes to the extent of an inch, or perhaps more, by the efforts of the lungs to disengage themselves.

With regard to the purple colour of the skin, this case shows clearly that this phenomenon does by no means necessarily depend on a pervious state of the foramen ovale, or an immediate communication between the two sides of the heart; since, in the present instance, it arose simply from a deficiency in the pulmonary circulation. Indeed, there are several cases on record in which the foramen ovale was found open, in adults, without any blue colour of the skin, or even without any disease at all having resulted from it. I have seen, in the hands of Mr Astley Cooper, a preparation made from the heart of Mitchell, a man who was lately executed for murder, in which the foramen ovale is evidently open, without the least vestige of laceration, and yet the man was apparently in perfect health before his execution*.

It cannot be denied, however, that, in a great number of cases of *blue children*, the foramen ovale has been found pervious; and I could easily point out a number of references to cases of this kind. But then it will be found that, in most such cases, other

* I think it appears pretty evident, from the peculiar valvular structure of the foramen, that (supposing the heart to be in other respects perfect) the circumstance of this foramen, or rather this oblique passage, being not entirely closed, would by no means imply that the blood must pass from one side of the heart into the other, but that, on the contrary, the resistance of the blood in the left ventricle would close that passage during the contraction of the heart.

organic diseases of the heart have been discovered, which concurred in producing those morbid effects. The most common defect, I believe, is, that, besides the foramen ovale being in some degree open, the aorta is found to arise from both ventricles; so that the blood thrown into the arteries by the contraction of the heart is partly venous and partly arterial. I have seen, at St Thomas's Hospital, a preparation illustrating this disease, which is perfectly clear and satisfactory.

It may be asked, why, in hydrothorax, when the respiration and circulation are much impeded, the same blue colour is not produced? But the fact is, that it often actually takes place in some degree; and if it does not appear in a more conspicuous manner, it is probably because the action of the lungs makes up in quickness what they cannot perform in quantity; a compensation which would have been much more difficult in the case which has given rise to these remarks, and quite impossible in the other organic diseases of the heart, to which I have just alluded.

With regard to the purple colour gradually disappearing after death, it cannot, I think, be accounted for upon any other principle than from the muscular action of the arteries continuing for some time after death, and forcing the blood towards the larger branches, which, being under the more immediate influence of the heart, do not enjoy a muscular power proportional to that of the smaller ramifications.

VII.

Case of Strictures in the Urethra removed by the Caustic Bougie, with an Account of the Appearances on Dissection 18 months afterwards. By RICHARD CARMICHAEL, Surgeon to St George's Dispensary, Dublin.

JOHN HACKET, a farmer, about 40 years of age, applied at St George's Dispensary, in the year 1804, to have advice for strictures in the urethra. He gave the following history of his complaint:—Eighteen years before, having had a violent gonorrhœa, the stream of his urine, some months afterwards, diminished; and this last complaint becoming worse, a complete retention frequently took place, particularly after laborious exercise, or taking spirituous liquors, to the excessive use of which
he

he was addicted. For the two last years, these symptoms were aggravated to so great a degree, that the desire of making water, which could only be expelled by drops, was unremitting, and the straining so violent, that a prolapsus ani was frequently the consequence.

Sinking under those complaints, he came to Dublin for advice, and was admitted into the Lock Hospital in January 1803; where he received considerable relief from the use of bougies for nine weeks, when he was discharged.

But his complaints returning in the following May, he again applied for admission, and remained in the hospital six weeks, during which time he received so much benefit from the common bougie, that he could pass his urine with ease, and was discharged the hospital as cured. However, in a short time after he had laid aside the use of bougies, the difficulty of making water returned, and increased gradually to its former excess, when, on the 1st of February 1804 he applied at St George's Dispensary.

Finding that I could only introduce a bougie of the smallest size, and that there were three strictures, one near three inches, another at about six and a half, and the third at seven inches and a half from the external orifice, I continued to apply the common bougie for three weeks; but not being able to dilate the passage, except at the first stricture, and it being impossible, on some days, even to introduce the smallest bougie, I determined on making a trial of those recommended by Mr Home, notwithstanding the prejudice that prevails against them.

February 21.—I began to use the caustic bougies on the stricture at six inches and a half from the orifice, and the application gave so little uneasiness, that I was induced to repeat it almost daily, till the 16th of March, when I discovered that this stricture was overcome, on trying a full-sized bougie, which passed freely till it met the opposition of the third stricture; considerable pain, with swelling in the perineum, followed, but disappeared in the course of a week.

This last stricture, which, I suppose, was situated at the commencement of that part of the canal which passes over the prostrate gland, was totally removed by fourteen applications of the armed bougie; for, on the 13th of April, a full-sized bougie passed into the bladder.

Severe pain and swelling of the perineum succeeded, together with considerable difficulty in passing water; these complaints, at first alarming, were removed in less than a week, by the use of the warm bath, emollient injections, and similar remedies. A bougie of the largest size could now be introduced without difficulty,

difficulty, and he had never any return of these complaints for the remainder of his life, which, about eighteen months afterwards, he unfortunately lost by a fever.

My inducement to make this case public arises from the opportunity I had of inspecting the state of his urethra after his death, which happened on the 6th July 1805.

In presence of Dr Toole, physician to St George's Dispensary and Fever Hospital, who recollected his case, and other medical gentlemen, I accurately examined the urethra, but could trace no vestige of the strictures, except a little roughness where the second stricture had been situated, exactly behind the bulb. It was so trifling that, had we not been acquainted with his former complaints, we should have taken no notice of it. The lining membrane of the urethra had been perfectly restored.

I shall make no comments on these satisfactory and unequivocal appearances of the urethra, which so forcibly indicate the superiority of the caustic over the common bougie. But the disrepute into which this mode of cure has fallen may be in a great measure accounted for, when we consider that, like every other powerful remedy in medicine and surgery, it is liable to be abused by a timid, unskilful, or ill-timed application. And, in the first place, I cannot approve of the timidity of the surgeon, who conceives it sufficient merely to touch the stricture, and instantly withdraw the bougie. A little consideration convinces us that this undecided conduct occasions the nitrate of silver to act as a stimulus, and not as an escharotic; thus producing the very consequences most to be apprehended, inflammation, obstruction, and fistula.

In the preceding case, and in every other which has since occurred to me, I applied the armed bougie steadily to the stricture for four or five minutes, and never experienced any inconvenience from that mode of application; for the surface of the caustic is necessarily so small, that if the period of the application were equally so, a sufficient quantity for the purpose intended would never be dissolved or brought to act upon the stricture.

But too bold a use of this bougie is as much, if not more, to be avoided; and the endeavour to force it through the passage of the urethra, when it happens to be affected with spasmodic contractions, must produce incalculable mischief. On those contractions taking place, it should be instantly withdrawn, lest the caustic should dissolve on the sound part of the urethra, which is far more susceptible of inflammation than the diseased parts, those on dissection being found of a hard, ligamentous, or cartilaginous nature*.

Considerable

* See Home on the Urethra, vol. ii, p. 56, 61. 242. 371.

Considerable discrimination will be necessary in selecting a proper time for applying the caustic; as it should be avoided when pain, inflammation, or ulceration, encompass the diseased parts, and obstruct the urine, while matter mixed with blood runs from the urethra. These complaints are first to be removed by warm fomentations, and other remedies of a similar nature, before bougies of any kind are to be used, but particularly the caustic; for, if employed during such a state of excitement, we need not be surprised that such consequences should follow as violent inflammation, mortification, and dangerous or fatal hæmorrhagies.

Without meaning to enter into any controversy, or cast any reflection on those gentlemen with whom I may differ on the subject, I beg leave to express my thorough conviction, that the caustic bougie will be found, on a skilful and impartial trial, a safe and efficient remedy, where every other has been in vain persisted in for years; and although the older surgeons endeavoured to apply caustic to strictures, they were much better acquainted with its virtues, than with the means of bringing them into action; and I can scarcely express how much I admire Mr Home's elegant invention of the conveyance of this powerful escharotic to the affected part, with which, simple as it may seem, the world has to regret it was not sooner acquainted; but which, if humility like mine may venture to predict it, will be tried wherever the principles of its action are known, and efficacious wherever it is tried.

Cumberland Street, Dublin, August 1. 1805.

VIII.

Observations on the Cure of those Unnatural Articulations which are sometimes the Consequence of Fractures in the Extremities, with Cases. By ANDREW INGLIS, M. D. one of the Surgeons to the Royal Infirmary of Edinburgh.

It occasionally happens, even under the best treatment, that the ends of fractured bones seem to have no disposition to unite, but become smooth and round, and move readily upon each other, giving rise to an unnatural, or what is called an artificial joint in the middle of the limb, which, of course, is rendered entirely

useless. It is not my intention at present to investigate the process of nature in healing fractures by the formation of callus, or to examine in what respect her efforts are deficient in the cases alluded to; but to give an account of the various methods which have been successfully employed by myself or my colleagues to effect a cure in these unfavourable cases.

When the ends of the fractured bone do not ride over each other, adhesion may sometimes be produced by rubbing the fractured extremities strongly and forcibly against each other, so as to excite in them a greater degree of action. In some cases, however, of fractured femur, where the callus seemed to have been so indolent that a cure could not be effected by this very simple procedure, I have succeeded by means of pressure. It was applied nearly in the manner recommended by Mr White of Manchester. A strong case was made of saddle leather, lined with soft shamoy, and stuffed round the edges. It was shaped so as to fit the thigh exactly, and to rest upon the condyles of the femur and patella below, and on the great trochanter and pubis above. When buckled on by means of straps properly adjusted, it closely embraced the whole thigh, so as to keep it extended, and to prevent the fractured ends of the femur from slipping from their proper situation, or riding over each other.

I was first induced to employ this contrivance in the case of a man who had been in the hospital nine weeks on account of a fractured thigh-bone, which showed no tendency to reunite, the ends of the bone moving freely on each other without crepitation. The case was buckled on, and the patient was desired to use his limb as much as possible. After walking about the ward for three weeks, he went to the country with the case on his thigh, and some months afterwards he returned on his feet to the hospital with the case in his hand to restore it, and to show that by its means he had been completely cured.

The same treatment was employed with similar success in the case of Charles Charleston, who was brought into the hospital on the 9th of April 1805, in consequence of a wall having fallen upon him. On examination, his right thigh was found to be fractured, very much swelled, tense and painful, particularly on motion, or when touched; but there was no wound or discoloration of the integuments. It was placed in a relaxed position on a pillow, and leeches and warm fomentations were applied to it. On the 18th of May, he was still unable to put his foot to the ground, or to walk without the assistance of crutches, as the bones had not reunited. A case was therefore fitted to his thigh, and he was desired to make every use of his limb, supporting himself as little as possible on his crutches. In the
course

course of five weeks, on the case being removed, the bones were found to be perfectly reunited.

In another case, and of a different kind, pressure was applied, but in a different manner, and with a somewhat different intention, by my colleague Dr Brown. At my request, he has been so obliging as to draw up the following account of it, which forms an important addition to the present series of observations.

On the 29th of November 1803, William Wilson, aged 35, came under my care, at which time, the tibia of the left leg, about its middle, was so much bent as to form an angle of nearly 145 degrees; this angle projected towards the other leg, the foot being thrown outwards. At this prominency, the ends of the bone could be made to move on each other without crepitation, and without pain. Two pretty extensive cicatrices were to be seen at the place, and a superficial ulcer of inconsiderable extent.

These appearances were the consequences of a compound fracture, produced by the wheel of a cart passing over the limb about five weeks before. The patient's general state of health had been restored.

On the 3d of December, the limb was laid, on the outside, into a case made of tinplate, hollowed in form of a leg, and lined with a quilted cushion. A considerable degree of pressure was then made by a roller over the prominent part of the limb, the sore having been previously dressed, and covered by a thick compress.

The bandage was suffered to remain till the 8th, when it was removed; the leg was much less bent; but as the pressure had increased the size of the sore, the roller was not again applied till the 16th, when the ulcer had put on a healing appearance. The roller being again applied was suffered to remain for four or five days more; it was then removed, uneasiness having been occasioned by it. In this way pressure was applied, with occasional interruptions, for about six weeks, when the ends of the bone were found to have united, and the limb, in a very great measure, to have regained its natural shape.

I saw the patient some months afterwards; the union of the bones was firm, and he could walk without inconveniency. He told me he thought that he would soon be able to resume his usual employment, which was that of a ploughman. There was still some superficial ulceration at the part where the skin had been originally injured.

But sometimes the ends of the bones ride over each other so much that the fracture cannot be reduced, or there exists some other untoward circumstance which prevents the success of this
simple

simple and easy treatment. In these cases we are forced to have recourse to a painful, dangerous, and difficult operation, the converting the simple into a compound fracture, by cutting down upon the fracture, and sawing off the end of the bone. In Boyer's lectures on the diseases of bones, it appears that he performed this operation but once, and that unsuccessfully; and he has confidently asserted, that it is practicable only in fractures of the femur and humerus.

‘ Si malgré ces soins, la mobilité des fragmens dans l'endroit de la fracture, annonce que leurs extrémités ne veulent pas se réunir, il reste une ressource dernière dans la résection de ces extrémités, opération douloureuse, sanglante, et d'un succès incertain, quoiqu'elle ait réussi dans un assez grand nombre de cas, pour qu'on soit fondé à l'entreprendre. Elle est impossible dans les fractures non consolidées de la jambe et de l'avant-bras, membres formés de deux os qu'il seroit difficile d'isoler des chairs, et dans lesquels le nombre des artères et des nerfs seroit un obstacle aux incisions nécessaires pour dégager les fragmens; elle n'est donc praticable que dans celles de la cuisse, mais surtout dans celles du bras.’*

It is with pleasure, however, that I am able, in confirmation of Mr Whyte's experience, with which Citizen Boyer seems to be unacquainted, to contradict Mr Boyer's assertions, and to prove that the application of our art is not so limited as he has represented it, by recording cures performed under circumstances in which he has declared them impracticable. The first was that of an unnatural joint in the fore arm, performed by my friend and colleague Dr Wardrop, with whose permission I extract the case from the records.

‘ Margaret Adie, aged 20. 10th December 1802.—About four months ago, a load fell upon her left fore arm, by which both bones were broken transversely. Although the parts were immediately placed in their natural situation, and proper splints and bandages applied, yet the bones have not reunited. The arm possesses a small degree of rotatory motion, but she cannot keep it extended. She complains of pain in the ulnar side, aggravated on motion and pressure, and the ends of the fractured bones may be distinctly felt riding over each other.

‘ 11.—The ends of the bones were this day strongly rubbed against each other, to excite, if possible, a sufficient degree of inflammation, and afterwards two splints and a bandage were applied.

* 26.

* Leçons du Cn. Boyer, sur les Maladies des Os rédigée dans un Traité complet de ces Maladies, par Anth. Richerand, 2 vols. 8vo. Paris, 1803. Vol I. p. 69.

26.—The treatment employed on the 11th having failed in producing the desired effect, this day both bones were laid bare by a longitudinal incision over each, one on the ulnar, and the other on the radial side of the arm; the upper ends of the bones were sawed off, and the under exposed. It was now discovered, that the interposition of a piece of tendinous substance had hitherto prevented the reunion. After the ends were properly adjusted, common dressing was applied, and the whole bandaged with two splints. No vessels of any consequence were cut during the operation, but it was succeeded by a considerable degree of pain.

27.—As the inner splint occasioned some pain at the lower part, it was found necessary to remove and cut a small piece from the end of it, which gave her considerable relief.

‘In the course of about two months, she was discharged perfectly cured.’

A very instructive case of an unnatural joint in the leg fell under my own care. The patient died suddenly from a cause totally unconnected with his lameness; and the inspection of the limb after death enabled us to ascertain that the cure had been previously completed.

6th December 1804.—John Storey, aged 40, is unable to put his foot to the ground, or to walk without the assistance of crutches. On examining the leg, a little above the ankle joint, the anterior part of the tibia appears uneven, and admits of a considerable degree of motion from an unnatural joint. The fibula is quite firm, but there is a considerable depression at the same place. This lameness, he says, was occasioned by an oblique fracture of both the tibia and fibula, which happened to him about nine months ago. For six weeks after the accident, he was confined to bed, and cold applications and splints were applied to the leg; but the ends of the fractured tibia, which now ride over each other, never united.

Dec. 28.—Since he was admitted into the hospital, he has been affected with some pneumonic symptoms, which were removed by bloodletting, and the application of a blister to his breast. This day, after applying a tourniquet to the ham, a longitudinal incision, about five inches in length, was made upon the anterior part of the tibia; the cellular substance was then carefully removed by dissection, and one portion of the superior end of the broken tibia removed by the trepan, and another portion by means of a saw. No part of the inferior end could be removed, on account of the depth at which it lay. During the operation, there was considerable hæmorrhagy, but no vessels were

were taken up. The wound was dressed with common dressing and a roller.

30th December.—After the operation he had considerable fever; the wound at first looked foul, but now healthy looking granulations appear in the bottom of the wound; his leg is, however, considerably swelled, and his foot œdematous.

January 20.—The swelling of his leg has gradually diminished, and the appearance of the sore improved. There is an exuberance of callus from the wound, covered with healthy granulations, and his leg is much firmer.

January 28.—He is now able to put his foot to the ground, and to walk with the assistance of crutches.

February 26.—He continues to get more strength in his leg, and to walk firmer, but he is at times affected with palpitations at the heart, dyspnœa, and frequent short cough, without expectoration. P. 112, and at times intermittent. Belly regular.

Utatur Mist. Mucil. urg. tuss. et sumat Haust. Anod. hora somni.

March 1.—He was seized last night with violent palpitations and great dyspnœa. Ten ounces of blood were taken from his arm, and he got an anodyne draught, with half a drachm of æther, which gave him no relief. His pulse intermits every fifth stroke.

March 6.—His complaints had considerably abated, but this morning he died suddenly.

The body was afterwards inspected. There was a considerable degree of congestion of blood in the lungs. In the pericardium about eight ounces of serous fluid were found. The heart and arch of the aorta were much enlarged. The semilunar valves were ossified. The aorta, at some places, was almost cartilaginous, and its inner surface, as it emerges from the left ventricle, was covered with ossific particles. The coronary and pulmonary veins were also much enlarged, and distended with blood. These appearances were sufficient to account for the sudden death of our patient, but what particularly interested us was the state of the leg, and we found that the fractured ends of the tibia and fibula were connected together so as to form one solid mass of bone.

THE INQUIRER, No. III.

"Is there any certainty in medical science?"

THE uncertainty and inutility of physic is the favourite cant among men who are alive and hearty, among incurable patients, and among no small part of the fraternity, who rejoice in having such a convenient means of escape in their frequent approach to the halter. Is a medical practitioner *ipso facto* a quack? or (what is seldom the case) will it be discovered, after inquiry, that professional men are really better than they call themselves? Let us examine the twofold grounds of impeachment brought against the most honourable faculty. We are unable to guard the body against the accession of disease, and to devise proper means of cure for all those which do exist. The prevention of diseases, it must be recollected, is generally left to each individual, as far as his own person is concerned; he may be taught, by the same experience which teaches all physicians, what is likely to hurt or to benefit him: in spite, however, of his knowledge and of his self-love, he chooses often to run the hazard of future contingencies, rather than sacrifice a momentary gratification; it is not, therefore, his domestic medicine that is in fault, but the accidental bent of his passions. He eats an hearty dinner, feasts on certain fruits, and drinks particular wines, because the whole flatters his palate, although he has never eaten so much, nor tasted such fruit and wine, without suffering afterwards: "*Qua nocere sequar, fugiam qua profore credam;*" he is as sure of the consequences of those sensual gratifications, as he must be of the scalding property of boiling water poured upon his hand or his foot. Hence the adage so true in itself, when the faculties are not disordered and impaired by irregular habits or by disease, that *every man must be his own physician*. Disease, however, is brought on by inexperience, thoughtlessness, and by various uncontrollable circumstances; the mind becomes agitated and disturbed, the patient thinks himself worse than he really is, and he wants somebody whose appearance he conceives to be the precursor of health and comfort. The physician becomes acquainted with the most prominent sensations of his patient; he feels his pulse and his skin, looks at his tongue, and examines the expression of his countenance. Not a word is said respecting those circumstances which exclusively belong to this particular patient, by which he is distinguished from all other men, in

a state of health as well as disease, which form what is generally called his constitution or his temperament: The poor patient is not to be blamed; he knows nothing about himself. The physician is equally blameless, for his time will not allow him to hear the whole natural history of his patient, even if it were in his power to collect from the latter the recollection of things to which he has perhaps never attended. In the mean time, the patient, who continues to suffer, accuses his physician; the physician accuses physic, and physic remains the only guiltless object among them. But this is not all: In a number of cases, the train of symptoms referable to the general laws of the animal economy sufficiently characterize the nature of the disease, and the proper indications of cure. Here, however, the peculiarities of intellect on the part of the practitioner, or whims on the part of the patient, or both combined, are again in the way of certainty in the practice of medicine. What is evident to a man of common observation, sagacity, and experience, may be peculiarly obscure to a practitioner of inferior capacity; what would be adequate to the removal of the complaint, if properly and firmly adhered to, may become inadequate, and even tend to aggravate its nature, when partially or wholly neglected by the patient. Can it then be wondered at, that people, who, from ignorance and imprudence, exchange health for sickness, are unable or unwilling to calculate the superior advantages of the temporary inconvenience of medical treatment over the perilous chance of violent and unbridled actions, or the wretchedness arising from an habitual disordered state of the body? To particularize all the sources of uncertainty to which the practice of physic is exposed, would be endless: Let it suffice to say, that the art of medicine has for its object a most complicated, most fugitive set of phenomena; that, unlike other arts, in which the difficulty of the enterprise confines the number of artificers to a few individuals properly qualified, medicine has been deluged with a set of men, to whom ignorance has imparted impudence and boldness; who deal with doses of mental stimuli as with chemicals and scruples; who inspire at once hope, confidence, and faith; while others creep along slowly with pharmaceutical preparations, the very idea of which nauseates many, and depresses all.

The influence of quackery spreads like contagion. Quacks have existed in all countries and in all ages; and it is not more astonishing to see one set of men attempting to cure most diseases through the medium of those things which act upon the mind, than to observe another adhering almost exclusively to the use of one or two favourite remedies. They both alike abuse the flexibility of organic nature, by forcing it into one particular channel;

channel; and if they acquire practical skill in the management of diseases, it is at the expense of the mother science, from which they banish every thing like consistency and order. Uncertainty can never be the true character of any part of natural history, when the study of that science shall be properly conducted, and the prejudices which interrupt its course be removed. The art of medicine is founded on observation: Particular facts, cautiously observed and accurately recorded, must ever be found susceptible of some degree of generalization; and whatever difficulties may be thrown in the way of the medical observer by the complex nature of man, the track of his researches still remains the same; for the phenomenon of body and mind, taken separately and in connexion with each other, are within the grasp of experience, and subject to the laws of inductive philosophy.

For the sake of illustration, let us examine the treatment of common fever. The strength is impaired, the appetite languishes, uneasy and unusual sensations are perceived in different parts of the body; the pulse is quick, the skin hot; we know by experience these symptoms are often speedily removed by an emetic, a brisk purgative, cold affusion, copious dilution, sweating remedies, strong emotion of the mind, &c. An emetic or a purgative may effect the cure, without expelling any *foeces* from the *primæ viæ*; a strong anodyne, the sudden application of cold water, or a violent moral affection, frequently coincide in producing the same effect: there must therefore be some mode of action common to all; and accordingly one is discovered, that of producing a strong impression on the sensibility of the system. We call that impression a *shock*; and we say that a shock frequently removes a febrile attack. Whoever objects to the word *shock*, as meaning nothing more than the mere expression of a fact, as containing no explanation of the phenomena; must be totally unmindful of what is generally understood by the word explanation. One fact is explained by classing it along with other facts of the same nature; and since organic bodies are subjected to particular laws, it becomes necessary to form those peculiar laws by induction. In the present instance, the curative means agree in one property,—in strongly affecting the excitability of the system; they agree also in removing the disease. The consequence of that simple association is, that this strong impression, or this shock, is the cause of what follows,—the cure of fever. Farther observation may discover other substances which produce the same effect, without affecting the sensibility much; then, and then only, shall we be enabled to say that the above means remove the fever on a principle different from that at present alleged; this last then becoming subordinate to the other. Again, it is said that emetics, cathartics, and diluents,

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are beneficial at the commencement of a fever, by expelling or diluting irritating matters lodged in the primæ viæ. These remedies have at least that one property in common; and we are instinctively led to believe that their efficacy depends on that property. The application of cold water, the exhibition of diluents, sudorifics, and purgatives, conspire in producing one effect; they reduce the temperature of the body, and they succeed in removing the fever. It is therefore natural to infer that they cure the disease by cooling the body. We may even go so far as to assert, synthetically, that the soothing the irregular actions of the nervous system, clearing the primæ viæ, and the reduction of the increased temperature, are the grand desiderata in the treatment of fever; and those remedies which unite most of these beneficial properties will be found most efficacious. Emetics and cathartics stand uppermost on the list, and in this respect experience confirms their theoretical superiority.

Phthisis pulmonalis may be taken, on the other hand, as an instance of those diseases, the cure of which is rendered difficult, and sometimes impossible, by causes susceptible of being explained, but not removed. *Phthisis pulmonalis* is an ulceration of the parenchyma of the lungs, accompanied by hectic fever, and gradual undermining of the system. All ulcerated surfaces are injured by exposure to atmospheric air, by a local action of the parts too great for their degree of irritability, and by a cachectic state of the body at large. In an ulcer of the extremities, or any other external part of the body, the access of atmospheric air is excluded by dressings; the degree of local vascular action is lessened by emollient, soothing applications, and by rest; the whole system is calmed, if necessary, by anodynes, and the strength of the constitution is attempted to be kept up by nourishing diet, good air, and tonic medicines: If external support be necessary to preserve a sort of equilibrium between the arterial and venous circulation, or to give firmness and compactness to the solids, bandages and a horizontal posture are employed. We endeavour, in short, to place the body in those circumstances, both general and local, which we know from experience to be most congenial to the healthy functions of the system at large, and of each organ in particular, without attempting to inquire more minutely into the rationale of those healthy processes of nature necessary to accomplish the end in view. Now it is equally true, however lamentable the fact may be, that our present dietetical and medical means are inadequate, in the case of *phthisis pulmonalis*, to fulfil the various indications of cure above stated; and the difficulty arises from the peculiar situation and functions of the heart. The lungs communicate with the atmospherical air, and the continuance of that communi-
cation

operation is necessary for the support of life; the deleterious influence of that elastic fluid, whatever it may be, which affects ulcerated surfaces so much, cannot be removed. The lungs receive, besides their own alimentary blood, the whole mass of circulating fluids; that function cannot be interrupted without the suspension of life; therefore rest is also out of the question, although the action necessarily produced by that vital function be too much for the weak and irritable state of the diseased part, and increase its disorganization. The various means which are proposed to improve the general health, and which would be otherwise so advisable in phthisis, tend to increase the momentum of circulation, and consequently to augment the local actions which require to be diminished: thus as much, probably more, is lost on one side than is gained on the other.

Such is the unfortunate course of our practice in one of the most common and destructive diseases of the age. We have sketched the general outlines of the relations subsisting between it and similar affections seated in other parts of the body. But it is not necessary to enlarge farther on this point at present. The object of this inquiry is to call the minds of medical men, by means of sober generalization, to that analytical method which prejudice and indolence have too long excluded from medical investigations. Such statements, when properly conducted, must appear as fair examples of induction as any of those which are implicitly received by chemists and natural philosophers, in their own departments.

The explanations offered may be deemed not sufficiently minute, and we are ready to grant that the science of medicine is not arrived at its ultimate degree of perfection; but our knowledge, so far as it goes, answers important and useful purposes in life: Let us only advance in the same track, and the futility of the common complaints will appear more and more. Medical practitioners, who get their daily bread by daily prescriptions, must be true to themselves, if they cannot, always be so to their patients. A mistake proceeding from ignorance or inattention should ever be referred to its true cause, as that is the only way to correct the want of skill, and check the habit of inattention. But if, in order to save their reputation, they shut their own eyes, as well as those of their patients, experience to them can be of no avail; running from one blunder into another, they discredit a profession, the success of which rests in a great measure upon the respect and confidence paid to it; and they discourage men whose talents and exertions would be beneficial to the improvement of the art, and to the welfare of society.

PART II.

CRITICAL ANALYSIS.

I.

Traité Pratique des Maladies des Yeux, par A. Scarpa, traduit de l'Italien sur le Manuscrit sous les Yeux de l'Auteur, et augmenté de Notes. Par J. Leveillé. 2 Tom. 8vo. Paris, 1802.

WHILST many parts of surgical science have made rapid progress towards improvement, in Great Britain, within the last twenty years, we have received few important additions to our catalogue of authors on the diseases of the eyes. Indeed, this branch of surgery has, for a long time past, been more cultivated and more ably practised by the surgeons of the continent than by those of our own country; and for the best practical works we have hitherto been indebted to France and Germany. The work before us shows how far, and to what degree of perfection, the Italian school has advanced in its knowledge of this interesting branch of medical science; and if we examine it with a view to practical utility, it appears to us to be a model of that perfection which is only to be obtained from the long experience of an attentive and accurate observer.

After a short introduction, in which the author mentions that he does not consider this treatise as giving a complete view of all the diseases of the eye, but only of those which he has had an opportunity of observing most frequently, and with most attention, he treats of each in a separate chapter, without attempting to arrange them in any systematic order.

In distributing the numerous diseases of the eyes into particular classes, many authors have frequently considered mere symptoms as distinct diseases, and have so multiplied names, that, instead of elucidating the subject, they have rather tended to mislead and perplex. We therefore consider it to be an advantage of the present work, that there is no attempt to enumerate

merate a variety of complaints which are common to other organs of the body alike with the eye, and that the author confines his observations chiefly to those diseases which are peculiar to the eye as the organ of vision.

The work is divided into twenty chapters, in which are considered *Fistula lacrymalis*; the *Stye*, or *l'orgelet*; *Incysted tumours* of the eye-lids; *Trichiasis*; *Relaxation* of the upper eye-lid; *Ectropion*; *Ophthalmia*; *Albugo*; *Leucoma* and *speck*; *Ulcer* of the cornea; *Pterigion*; *Ecanthis*; *Hypopion*; *Hernia* of the iris; *Cataract*; *Artificial pupil*; *Staphyloma*; *Dropsy* of the eye; *Amaurosis*, and *Calculous concretions* formed within the eye-ball.—From the variety of information given on these subjects, we shall extract what is most new and interesting, and offer such remarks as have occurred to us on a careful perusal.

OF THE FISTULA LACRYMALIS.

Having shown the impropriety of the term *fistula lacrymalis* in its common acceptation, and pointed out the different forms of the disease, Professor Scarpa attempts to demonstrate that this complaint does not begin in the lacrymal passages, but originates in a morbid secretion from the sebaceous glands situated along the tarsi, and from the internal membrane of the palpebræ. He conceives that the morbid matter thus secreted is mixed with the tears, flows along with them into the lacrymal sack, and, when in small quantity, readily passes into the nose. If, however, the morbid discharge increases, it does not pass so readily into the nose, but is detained in the sack and duct, irritates them, and brings on inflammation; as the inflammation increases, the membranes lining the canals also secrete a quantity of matter, become thickened, and the fluid collected from these sources distend the sack, so that a tumour is formed externally, and the tears are prevented from passing freely into the nose.

When the disease advances still further, the external integuments give way, and the morbid matter and tears are either discharged from a fistulous opening, or flow over the eye-lid. These observations lead our author to divide the disease into four different stages: The first is, when the morbid matter does not collect in such quantities as to distend the sack: The second, when it distends the sack so as to form an external tumour, and interrupt the flow of the tears: The third, when the sack, after being distended, ulcerates externally, and forms what is properly called *fistula lacrymalis*; and the fourth, when there is not only an external fistulous opening, but also a caries of the os unguis.

These being separately considered, and the mode of treatment pointed out, Prof. Searpa draws the following general conclusions.

1. That it is impossible to obtain a perfect cure of this disease, whatever be the degree, the period, or complication, without, at the same time, correcting the diseased secretion of the eye-lids by the application of topical remedies.

2. That in the second stage of the disease, attended with atony and sensible distention of the sack, however completely the morbid secretion of the eye-lids be removed, and in whatever degree the action of the nasal canal be restored, the weeping is unavoidable, until, by the aid of an incision made its whole length, and by the application of escharotics and astringents to its internal surface, the sack shall have recovered its natural capacity, so that the proportion in the size of that cavity corresponds to the caliber of the nasal canal.

3. That fistula lacrymalis, complicated with caries, erosion, and perforation of the os unguis, and of that portion of the pituitary membrane lining the nose, and also with an obliteration of the nasal canal, is susceptible of cure, provided that the caries around the os unguis does not penetrate too far among the ethmoidal cells. In this case the weeping is not to be dreaded if the fungosities in the interior of the sack be destroyed, and suppuration be excited in the carious and perforated bone, and the interior parts of the sack cicatrized and restored to their natural size.

4. That, in cases of fistula lacrymalis, accompanied with denudation of the os unguis, and insurmountable obstruction of the nasal canal, where it is necessary to make a new passage for the tears from the sack into the nose, actual cautery is preferable to the simple application of the trocar; because, without the destruction of that portion of the pituitary membrane which covers the os unguis, it is impossible to keep the new passage sufficiently large, and constantly open.

5. That at the end of the treatment of the first, second, and third stages of the disease, it is a very necessary precaution to observe, that the internal edges of the lacrymal sack, which are already cicatrized, be not torn open; and that they are allowed to come together just at that period when we are well assured that the tears do not meet with any obstruction either in passing through the natural canal, or by the artificial passage made by cauterizing the os unguis, and the corresponding portion of the pituitary membrane.

From such cases as we have had an opportunity of examining, both before and since we read these observations, it seems probable

bable that a disease generally treated as *sistula lacrymalis* arises from a morbid secretion of the eye-lid; and, on the other hand, we have seen cases where a purulent looking fluid was collected in the lacrymal sack, and when it was even much distended and ulcerated, and yet no disease could be discovered in the eye-lids. It therefore appears to us, that however useful the observations of our author may be on this head, they ought to be kept within certain limits; if the palpebral membrane is diseased, it can be readily ascertained, as it is within the reach of our sight; if there is no change to be observed in its structure, we have every reason to believe that the disease is confined to the sack itself, and we are thus enabled to lay down a rational mode of treatment, according to the seat and extent of the disease.

In those advanced stages of the complaint, when there is a contraction of the nasal canal, our author does not seem to be acquainted with the mode of treatment by a silver style, proposed some years ago by our ingenious countryman, Mr Ware; and it is very remarkable that he takes little or no notice of a practice, often employed in this country, of introducing a metallic tube from the lacrymal sack into the nose, either through the nasal duct, or through a perforation in the *os unguis*. The favourable reports of both these modes of cure, and the happy issue of those we have had an opportunity of seeing, would lead us, in most cases, to prefer one of them to the more tedious, more difficult, and more painful mode of treatment adopted by our author.

In addition to these observations, the French translator has stated, at considerable length, other diseases of the lacrymal passages, which prevent the free passage of the tears into the cavity of the nose. For these, which are neither new nor interesting, we must refer our readers to the work itself, or rather to Boerhaave's treatise on the same subject, published 55 years ago.

OF THE STYE.

THE stye, or *l'orgelet*, a species of tumour so frequent, and so liable to return in those who have been once affected with it, is considered by Scarpa as a particular species of inflammation.

The disease commences in the skin, extends by degrees into the cellular membrane, and surrounds and deadens a part of it. The tumour becomes circumscribed, and forms a hard painful swelling, which, although considerably elevated above the skin, contains only coagulated lymph, and the disorganized mortified portion of the cellular membrane. It does not suppurate unless in a very imperfect manner, and when that happens, it does not take place in the centre of the tumour, but all round it. The skin generally ulcerates in one or more places, and opening

there escapes through the opening a small quantity of serum, and soon afterwards the portion of mortified cellular membrane which formed the nucleus of the small tumour.

Except at the very commencement of the disease, our author thinks it improper to attempt the cure by resolution; but when the skin alone is affected, cold metal or ice applied to the apex of the tumour is the most useful remedy. When it has advanced so that the cellular membrane is affected, the best mode of treatment is the use of fomentations, and the application of emollient poultices.

With regard to the more indolent species of tumours which frequently grow on the eye-lids, extirpation is recommended as the only remedy; and as they are more commonly connected with, and adhere closer to the inner membrane than external skin, it is advised to remove them from the inside of the eye-lid. This operation is not, however, necessary, unless the tumours grow so large as to become a deformity, impair vision, or encircle important organs; for we have known more than one case, where such tumours have disappeared after remaining for many years; and also of cases where they have undergone no change, and have been the source of little distress for a long time after their first formation.

OF TRICHIASIS, OR ENTROPION, ECTROPION, AND THE RELAXATION OF THE SUPERIOR EYE-LID.

THE usual mode of cure adopted by the older surgeons, when the tarsi were inverted, was to remove a portion of the skin of the eye-lid, and unite the edges of the wound so as to pull them into its natural situation.

Maitre Jan, and some of the modern surgeons, finding that this mode of cure was insufficient, laid it aside; but Scarpa refutes their opinion, shows the advantages that arise from it, and describes the best mode of performing it. As to the operation itself, so much depends on the means which are employed to keep the tarsus in its new and natural position, and in retaining the lips of the wound in accurate contact until they adhere, that we think our author rejects on too slight grounds the use of futures, and trusts too much to the adhesive plaster, which is very apt soon to become loose, from the watering of the eye, and from the constant winking and motion produced by their irritation; whereas if three or four stitches are made close to the tarsus, and afterwards adhesive plasters applied over the eye-lids, and extended over the cheek, so as to prevent the muscles being thrown into action, the operation will have every chance of success,

When

When the upper palpebra hangs down, so as to cover the eye, and obstruct its vision, the same kind of operation is recommended.

The ectropion was formerly supposed to arise from a diseased contraction of the external integuments of the eye-lid, and not from any morbid affection of the internal palpebral membrane. Maitre Jan, however, remarked that as, in this disease, the internal parts of the eye-lid were swelled, and secreted a morbid matter, our means of cure ought to be applied to it, instead of the usual mode which is recommended, of dividing the external skin, and separating the lips of the wound, so as to allow the eye-lids to fall into their natural situation.

Convinced of the truth of this observation, Scarpa recommends the application of escharotics and astringents to the diseased internal membrane, or, if it has been much thickened and hardened, even to cut it out.

OF OPHTHALMIA, ALBUGO, LEUCOMA, AND ULCER OF THE CORNEA.

OUR author, in treating of ophthalmia, describes two forms of the disease; the one of which he calls the acute, and the other the chronic ophthalmia. His description contains many useful practical observations on this subject, and it is without doubt the most accurate relation of the phenomena of the disease we have ever met with. But when we come to examine particular cases, and attempt to arrange them under either of these classes, the difficulty commences, and we find that our ingenious author has merely paved the way for the research of future observers. In one case, for example, we observe that the patient complains of violent pain in the head and eye-ball; the secretion of tears is increased; the cornea remains transparent; few blood-vessels are to be seen on the sclerotica, and they are of a bright colour; there is intolerance of light, and general fever. In a second case, besides the symptoms of general fever, pain, &c. the adnata becomes swelled, red as a piece of scarlet cloth, and much resembling the inner valvular surface of a small intestine; the cornea remains quite transparent; and instead of the secretion of tears being increased, there is a copious discharge of a purulent looking fluid. In a third case, we observe the increased number of vascular trunks, and an obscurity of the cornea. In a fourth, besides numerous vessels exhibiting a peculiar appearance in their distribution, there is a pustule on the cornea or sclerotica, which, if not removed by the application of medicines, advances to ulceration. In a fifth, the disease is confined en-

tirely to the eye-lids and tarfi. Now, all these varieties of inflammation, and many others, occur frequently, and each of them requires a particular mode of treatment; it must therefore be of unquestionable importance to be able to discriminate these diseases from each other, so as to enable us to propose a rational mode of treatment; and it is from this want of discrimination that so many valuable remedies fall into disrepute; and that the applications which are found useful in the hands of one practitioner fail in those of another.

If necessary to confirm our opinion, we could bring forward many examples of the most powerful remedies proving very hurtful from being made use of in an improper stage, or to an improper species of inflammation. Our readers must be able, after a little reflection, to remember such. We may only mention scarification as one useful remedy, which is much abused. Commonly speaking, it is recommended in ophthalmia; but the cases are numerous, where it is not only useless but extremely hurtful, and the more so, if it is not very dexterously performed.

In the treatment of ophthalmia, our author lays down the same plan of treatment which is generally followed in this country, and he points out at some length, and with considerable precision, the proper periods for the exhibition of the different remedies.

HYPOPION.

Our author considers the practice which has been recommended by eminent oculists, of giving an outlet to purulent matter collected behind the cornea, or between its layers, by making an incision through that coat, as highly improper.

When the eye is in a sound state, a wound of the cornea with a sharp pointed instrument is neither attended with much pain, nor followed by any serious consequences; but when a similar wound is inflicted, while, at the same time, there is an accompanying disease, the final event is not so easily foreseen. When an incision is made in the cornea, in order to evacuate pus collected behind it, it commonly oozes out so slowly, that almost the whole aqueous humour escapes along with it; and if, from any accident, the edges of the wound be prevented from uniting, a fistulous opening is formed, through which the aqueous humour perpetually oozes out, or the iris passes through it, and forms a hernia. We ought to be aware of all those accidents before making an incision through the cornea, and at the same time be assured that very large collections of purulent matter are often absorbed,

absorbed, even after it has been long stagnating in the anterior chamber. We therefore agree with Scarpa in thinking that such an operation will seldom be necessary; that the cure is to be accomplished by the abatement of the inflammation; and if the absorption do not take place after the accompanying inflammation is removed, that is to be accelerated by the application of stimulants.

CATARACT.

"It has been long disputed," says our author, "which of the two modes of operation, extraction or depression, deserve the preference, and the advocates for each have exaggerated the advantages of the one, and disadvantages of the other. But impartial observation and experience, which must decide in all cases, seem to have pronounced in favour of the antient method of treating the cataract, that is to say, in favour of depression, which is more easily executed than extraction; because, by depression, as by extraction, we can cure every kind of cataract, crystalline, membranous, solid or fluid; because depression is followed by symptoms less severe, and less dangerous than those which sometimes happen after extraction; and from the circumstance, that if the depression does not succeed, we are able, without any risk, to repeat the same operation two or three times on the same eye; which we cannot do when extraction has not had the desired success."

It would be out of place for us to enter into any long and elaborate discussion on this subject; it has been already canvassed by the most able writers and most experienced surgeons; but we think it proper to make a few remarks, as the opinion of our author is not only opposite to that which we have always ventured to entertain, but as it is generally combated by the most distinguished oculists of the present day.

It is commonly believed, that the operation of extracting the cataract is the most difficult, and requires more manual dexterity than any other operation in surgery. This must be one great cause of its want of success; and if we examine with attention the numerous objections which have been brought forward against this mode of operating, we shall find that they all arise from errors or faults in its performance, and not from any defect in the nature or principles of the operation itself. All the different steps too of the operation are readily seen by the bystanders, so that the surgeon is always liable, on any want of dexterity, to be accused of awkwardness.

No little skill and dexterity are also necessary to perform the operation

II.

An Inquiry into the Rot in Sheep and other Animals, in which a Connexion is pointed out between it and some obscure and important Disorders in the human Constitution. By EDWARD HARRISON, M. D. F. R. A. S. Edinburgh and Aberdeen, 8vo. London, 1804.

COMPARATIVE anatomy has, within these few years, been most successfully cultivated and improved. The same spirit of philosophical inquiry is only required to make equally interesting, if not more important discoveries, in another branch of this science, which may be called *comparative pathology*. It is indeed, not a little remarkable, that the diseases of horses, cattle, and sheep, which occur so frequently, and are so seriously lamented, should be so imperfectly understood. No greater benefit could be conferred on physical science than a complete history of the diseases of our domestic animals, especially if given by any one endowed by nature with superior acuteness, and a talent for observation, improved by habit and experience; who could describe the symptoms and appearances of the different disorders, point out the analogies with those incident to the human body, detect those minute circumstances which serve to distinguish them, class them under their proper heads, and correct all the confusion in which they now lie involved. Veterinary medicine has lately occupied some share of attention, chiefly as relating to horses, and as a distinct pursuit from the general study of all the diseases of animals, but considered apart from any relation or inquiry concerning the treatment of the morbid states of the human system. It is in this last point of view that comparative pathology seems to offer so many subjects worthy investigation; and, when looked upon in this light, it strikes us as one of those studies, "*quæ ad nos pertinent, et quæ nescire malum est.*"

Perhaps it may be objected, with some apparent plausibility, that from the different formation of the bodies of quadrupeds, the different structure of their organs, and the dissimilarity in their diet, functions, and habits, their diseases can afford no fair analogical illustration of those incident to mankind; and that remedies, which are successful in one case, will not be equally so in the other. As to any objections to the comparison being degrading, which may arise in the squeamish minds of superficial thinkers, it is sufficient to answer, by declaring that all such notions are unworthy of man; "proud man drest in his little brief authority!" What is to be said in reply to the first

first and only apparent objection? Why, in the first place, it may be remarked, that conclusions in medical science can only be formed by experiment and induction. Animals are subject to many of the same diseases, and these diseases are cured by the same means as among ourselves; and notwithstanding some diversity in the structure and form of their bodies, yet they have heads and hearts, brain, lungs, and stomach; and the general principles of their economy, and the laws which regulate their organization, are precisely the same as in our own bodies. They are subject to diseases belonging to the four great divisions of nosological writers; to pyrexia, phlegmasia, cachexia, and neuroses. Fevers are in general accompanied by local inflammation, and such complaints are very common. Horses are very liable to pneumonia, they suffer sometimes from rheumatism, and even from gout, as we are told by authors on the veterinary art.

Spasmodic complaints often occur among them, and it has been said, where one of the human species suffers from locked jaw in this kingdom, 10 or 20 horses are affected by it. Animals are subject to the same decays and diseases of the intellectual powers as man; in old age they become feeble and stupid, and they are subject to mental derangement. Scrofula and pulmonary consumption extend their ravages beyond the limits of civil society. Monkies and apes, which have died at Exeter Change, have always been found, on dissection, to be labouring under some scrofulous affection, and most of them have died of true phthisis pulmonalis. Cows are frequently affected by phthisis*; and sheep appear to suffer from a similar disorder, though it is called by a different name. Cutaneous diseases are very common among brutes, especially among pigs and sheep. There is an eruptive disease of sheep, which, from its description, would seem to bear a very striking resemblance to small-pox†. It appears in the form of inflamed pustules on the teats, thighs, and other parts of the body not covered with wool. It is distinguished into a distinct and confluent species; it is attended with constitutional affection, and Vitet adds from report, that the same animal does not suffer from this complaint more than once. It is known in France under different names; in this country, every eruptive disorder in sheep goes under the name of *scab*; much, therefore, remains to be known about this pustular disease, and of the supposed efficacy of some late trials reported to have been made to prevent it by inoculation with vaccine virus. This cursory enumeration of some pathological facts connected with the lower animals is merely intended.

* Beddoes on Consumption.

† Vitet, *Méd. Veterin.* tom 2.

tended to show how wide a field is open for research and discovery. Experiments with new and powerful medicines, whose efficacy is not well appreciated or defined, cannot be made often on patients of the same tribe as ourselves; they are prevented for obvious reasons: but there is no reason why some trials should not be made, by administering them to animals when sick, which are too often neglected, or, what is worse, badly treated. Our materia medica might perhaps be improved, by attending to the different indigenous plants which are used by farriers and country people, or by administering others, some of whose properties are already but imperfectly known. The *digitalis*, whose efficacy in inflammatory diseases is not at present well understood, might be employed in inflammatory diseases of horses and cattle; and some analagous remedies might perhaps be obtained, by attending to the effects produced by different noxious vegetables, which are sometimes swallowed in too great a quantity. Some caution will be required in drawing conclusions from the effects observed in animals, although there is no chance of deception from one very common source of error, the imagination of the patient; for it is well known that some substances, whose effect is determinate on the human frame, produce no such action in the bodies of other animals. Our domestic animals are subject to dropsy, under almost all its forms; some comparative trials might, in such instances, be made with medicines, tapping, and the use of injections into the cavities. Hitherto there is little exact information with regard to hydrophobia; the opinions respecting its nature and its treatment are various and contradictory. Several important points remain still to be determined, and might be ascertained without much difficulty. Is it a disease depending upon inflammation, or not? By what species of animal is it capable of being propagated? What period does absorption require to take place? What will prevent the accession of the disease after the bite? What medicines, and what general mode of treatment, possess any power in alleviating or removing the symptoms? What is the effect of cold during the period of the disease? These and many other such questions will readily present themselves to any person who reflects upon what we do not know about hydrophobia; and many other diseases might be pointed out, where our ignorance is nearly as complete, and which appear capable of being illustrated by a series of comparative investigations. Diabetes, a complaint equally obscure and obstinate, is said to occur both in horses and cows; it would be interesting, in any such instance, to analyse the urine and the blood, and to compare the results with those of the fluids in health.

Epidemic and epizootic diseases are very closely connected together, and this relation, if well understood, may be of great importance. It might lead us to infer, that such diseases are propagated in the first instance, by a more general cause than specific contagion, and thus might enable us to prevent or to mitigate the horrors of an impending pestilence. Pestilential diseases have been observed among animals from the earliest records of history; they are mentioned both in sacred and profane writings; they in general precede the plague among men. *Homer*, *Thucydides*, *Ovid*, and *Lucretius*, have alluded to this curious fact most distinctly and particularly.

Some diseases, which have been added to the catalogue of human infirmities since the days of Hippocrates, have been referred by conjecture to the brutes as their source. The venereal disease, the small-pox, and the yaws, have been attributed to such an origin, but with what truth seems doubtful. The cow-pox and hydrophobia prove clearly that some morbid actions may be communicated by inoculation from one species of animal to another. Syphilis and the small-pox have been mitigated in their violence by ingenuity and experience; and the happy discovery of the cow-pox leads us to hope, that one of these evils will soon be made to disappear, and perhaps, in some happier age, both will be known only by description. There is good reason to believe, that some curious and useful information might be obtained respecting the origin of contagious diseases, by a minute examination of the history of epizootic distempers. The *glanders*, for instance, among horses is one of the most formidable and highly infectious diseases; yet this can be excited at any time, and the accumulation of animal effluvia will, under certain circumstances, produce it. To multiply examples of the utility of such inquiries would be unnecessary: these hints are sufficient for our present purpose, to point out the importance of this department of natural knowledge, and to excite some enlightened minds to the cultivation of it.

Similar ideas have given rise to the essay before us, the first part of which is occupied with an inquiry into the nature of the soil, and the circumstances which induce and which prevent the rot; and in this investigation the author attempts to prove, that this disease in animals, and intermittent and remittent fevers in the human subject, are all produced by marsh miasmata. In the second part, the history of the rot in sheep is given, with an account of the different theories which have been started to explain the causes of it, and the means of prevention are suggested. Dr Harrison refers this disorder wholly to the liver, and he gives a vague and confused definition of it; perhaps

haps what is stated at the beginning of his essay may be called an explanation, but it is very unsatisfactory. No words could better express the hasty and superficial view on which these partial judgments are commonly founded. It seems most probable, the term *rot* was first employed to characterize a disorder and decay of the whole system, and was afterwards applied to every fatal or chronic complaint. It is now sometimes used, by ignorant farriers, to signify the fatal termination of pneumonic inflammation in horses, and is strictly as applicable to a disease of the skin as to any morbid state of the thoracic viscera. Like the word *staggers*, it is a convenient word, and is often employed in a general sense to very different complaints, though it is sometimes accurately enough applied to distinguish one particular disease.

The first question that presents itself is, What is the exact nature of the rot in sheep? The second, To what causes is it to be ascribed? If we wish to be accurately acquainted with this disease, and to be able to prevent its ravages, we must endeavour to solve these questions, beginning with the last. Marsh miasmata appear, on the first superficial glance, to be one cause of the rot. Dr Harrison considers this the only true cause, and he does not trouble himself to investigate the other causes alleged more narrowly. Like the knights-errant of old, who wandered about to attack giants and dragons, he does not seem to entertain the least doubt of the existence of such monsters as marsh effluvia. That some connexion subsists between wetness of the season and moist districts and pastures, and the rot, is well established by innumerable facts; but it does not appear that this connexion is necessary or universal, even from our author's own confession: for the rot does not occur on marshes near the sea, nor in some bogs and swampy tracts in Ireland, nor on peat mosses, nor on chalky lands, though moist, p. 11. Dr Harrison attributes these exceptions to the influence of the miasmata being counteracted by the combination of saline particles and other substances. Intermittent fevers are certainly more frequent in the neighbourhood of marshes and swampy grounds. These complaints, however, do not solely arise from that cause, since persons residing in the middle of large cities and towns have obstinate intermittents, without ever being exposed to such remote causes. In answer to this, Dr Harrison says, that he does not mean to affirm that the same identical miasmata are equally the cause of all the diseases enumerated in his essay; for probably different soils exhale different noxious miasmata. It is obvious that no refutation of such reasoning as this can be given, because we know nothing of the chemical qualities of these effluvia.

Our

Our author next proceeds to examine *eight* different theories or hypotheses that have been brought forward to explain the cause of the rot in animals. He adduces objections, and satisfactorily refutes most of these; but he seems to treat the common notion of the rot being produced by flukes with too great contempt; because he is at a loss to conceive how these *faciolar hepaticæ*, or their ova, can penetrate into the substance of any viscus, or into the blood-vessels, during life. He challenges the supporters of this opinion to show some of the *faciolaræ* out of the body, and mentions his having repeatedly examined ditches and pastures in vain; though he ingenuously confesses he looked for them without much care and attention. The difficulty of explaining a fact does not always lessen its authenticity; and, in the present instance, we have an interesting fact on record, which well deserves attention. In the first volume of the *Monthly Magazine* there is a valuable communication, which states, that a jelly-like substance, resembling flukes, was discovered soon after a piece of land, formerly notorious for causing the rot in sheep, was under-drained; and some of the insects, exactly like flukes, but whose real nature was not ascertained, were found near this spot on a plant called *brook-weed* (*sum nodiflorum*), a common species of water parsnip.

After stating his own opinion, that the rot is occasioned by poisonous effluvia, which, under certain circumstances, are emitted from marshy soils, our author endeavours to enforce this as the most plausible hypothesis, and refers to the *nervous energy* for an explanation of the phenomena. This is placing Pelion upon Ossa; referring an unknown circumstance to a cause still more inexplicable. Many of the facts related, however, are both curious and interesting, and prove the author's zeal in the inquiry he has undertaken. Having thus given the general outlines of Dr Harrison's essay, this opportunity may be seized for submitting a few hints for farther consideration; and as it would be presumptuous to advance any thing with great confidence on so dark and difficult a subject, these few remarks will be offered in the form of queries. Are there not three distinct diseases in sheep confounded together under the general term *rot*? Do not these diseases resemble *phthisis pulmonalis*, *hepatitis*, and *scorbutus*, in the human subject? The first characterized by cough, hectic fever, and emaciation; the second by inflammation, enlargement and thickening of the membrane of the liver, or by a diseased state, in which flukes are found in the biliary ducts; and the third disease resembling scurvy, which appears to be the common form of the rot. To this last disease, the word *rot* is particularly applicable. The symptoms described by Dr. Harri-

son, and all other authors, show the disease to be of that general nature, like scurvy in the human constitution. The dulness of the eyes, the foulness of the breath, the livid whiteness of the gums, the yellow and black spots of the skin, the easiness with which the wool separates from the pelt, all demonstrate the morbid state of the whole system. The causes which produce the rot are similar, such as noxious and improper food, deficiency of food, from the pastures being too poor, or the herbage too succulent; exposure to cold and wet weather. The method of cure also corroborates this opinion. Tonic medicines, as preparations of iron, are recommended, and Mr A. Young is disposed to think favourably of such medicines. Turning the animals on salt marshes, feeding them at home with dry good hay, and dry lodging, draining the wet land, and stocking it with a less number of sheep, have been found the best means of curing and preventing this dreadful disorder.

Upon these three suppositions, then, which have been stated with regard to the nature of what is vulgarly called the *rot*, most of the opposite and contradictory opinions seem to admit of being reconciled. The different alleged causes, the different symptoms, and the different modes of prevention, seem to admit of an easy solution, by thus reducing them under three heads. It must, however, be confessed that much remains to be done, and much discrimination ought to be used. With a view of assisting the laudable exertions of such individuals as the author of the work alluded to, these hints are suggested for farther inquiry. To promote this desirable object, the *Board of Agriculture*, whose labours do them so much honour, ought to circulate a list of queries, and offer a premium for the best experimental essay on the rot of sheep. Much useful information might thus be collected, and the numerous histories and dissertations would tend to illustrate many interesting and important points in pathology.

A series of questions on the diseases of different animals might be circulated by the same respectable authority, and by the co-operation of the enlightened medical practitioner and the intelligent farmer, and the honest, artless, experienced peasant; the history of all maladies might be rendered more perfect; a substitute might be discovered for mitigating the evils of the most virulent, and a cure might, by some fortunate accident, be devised for the most distressing infirmities of mankind.

III.

Succincta Descriptio Febris Epidemicæ Malagæ nuper sævientis, Symptomatumque ipsam comitantium, unâ cum Methodo ei medendi adhibita. AuCTORE D. JOANNE EMMANUELLE ab AREJULA, edita jussu D. P. TRUXILLO, Rerum Militarium Civiliumque Rectoris Malagæ. Ex Hispanico in Latinum versa a J. S. FRANK, M. D. 8vo. p. 44. Viennæ. 1805.

THIS short history of the fever which raged at Malaga in the autumn of 1803, was written and published at the particular request of the chief magistrates of that place. The author, Dr Arejula, was sent by the Spanish government to inquire into the nature of the epidemic (or the plague, as it was called), then committing such havoc at Malaga, from his having acquired great celebrity by his skilful treatment of the disease at Cadiz and Medina Sidonia in 1800 and 1801. By order, Dr Frank has translated this account into the German, and he has voluntarily undertaken to give it a more extensive circulation by retranslating it into the Latin language. From the extravagant praise bestowed upon the author by his translator, and the copious list of complimentary Latin epithets lavished on the method of cure, our expectations were raised very high, but in these we have been disappointed; for, after reading the treatise with care, we find little to commend either in point of accuracy in relating the symptoms, or in any display of judgment and skill in the treatment of the disease. On a subject so important, where our sources of information are so few and imperfect, we shall best perform our duty by giving a full analysis; as full, indeed, as the very narrow and incomplete view which the author himself has taken will allow. It must be observed, Dr Arejula apologizes for the brevity of his history, by confessing that he does not propose to give any full systematic description. This important duty he defers till some future time; he proposes merely to detail the symptoms as he saw them, and to describe the method of cure which he discovered some time ago, and which long experience taught him to prefer to every other.

On his arrival at Malaga in the month of October 1803, Dr Arejula immediately pronounced the disease then prevailing to be the same as that which had been so violent and fatal at Cadiz two seasons before. After examining the patients in the hospital, he summoned a consultation of all the medical practitioners in the place, who appeared capable of communicating the obser-

ventions they had made in their attendance on the sick. At this meeting it was determined that the prevailing epidemic was *typhus icterodes*, or the yellow fever. Every one of the fraternity assented to our author's diagnosis, and this report was soon announced to the Prefect of the town, and proper steps, it is said, were immediately taken to extinguish and to prevent the spreading of this contagious malady. It will appear, however, from the sequel, that the idea of the contagious nature of the disease had no influence in directing the means for putting an end to its ravages; for no mention whatever is made of any attempt to check the progress of contagion.

Description of the Disease.—This fever began with chilliness, sometimes with a cold fit; in a few hours the pulse became quick and weak, the temperature of the body greater than natural, and it continued so through the whole period of the disease; but it was not the same in every stage; the patient complained of pains over his whole body, and of prostration of strength; the functions of the brain very little impaired; urine natural; colour of the skin yellow, or pale inclining to yellow; the febrile actions generally terminated on the third, fifth, or seventh day. From this general train of symptoms, our author inferred that the fever was what is called the yellow fever. He next describes the disorder more particularly. The first attack was often quite sudden and unexpected. The symptoms were sometimes regular, sometimes irregular, in their appearance. Shivering, slight chilliness, but never evident coldness, violent pain in the head, pains over the whole body, especially in the back, great heaviness of the eye-lids, were the most constant symptoms. The patients complained of great languor and dryness of the nostrils; the tongue however was moist, and less foul; the skin became yellow, especially after the third day; the brightness of the eyes disappeared, and the whiteness of the cornea was so changed to a reddish colour, that an inexperienced observer would suspect the beginning of ophthalmia, or the prevalence of inflammatory diathesis. The features became collapsed, the sick refused all sorts of animal food, the pulse sometimes seemed to be strong, sometimes so weak as to indicate great want of energy in the circulating powers. All desire of food then ceased, frequently all efforts to vomit were at an end; then diarrhoea took place. Sometimes both these symptoms occurred at the same time, and the matter discharged was very fetid. An uneasy sensation was felt in the stomach, profuse perspiration broke out, and the urine became tinged with bile. These symptoms remitted, either with or without sweating, after 24 hours; an exacerbation took place the next day, and remission or complete pyrexia followed on the 3d, sometimes on the 4th or 5th, sometimes even on the 7th day;

day; though this rarely happened. The animal functions were not much disturbed by the symptoms just enumerated, as long as the fever did not become more violent; after these subsided, debility and want of appetite only remained. Symptoms which are denominated irregular or anomalous, excessive shivering and manifest coldness at the commencement of the disease; inordinate febrile action; tremulous, dry, and foul tongue; violent headach; pain, swelling, and redness of the eyes; weariness in the limbs, sometimes inability to move them; constant nausea, and vomiting of yellow, bilious, and dark-coloured matter; pain in the region of the liver; sense of heat in the stomach; coldness of the extremities; the faces tinged with the same black bile as that ejected by vomiting. Excessive restlessness and anxiety seized the sick, their speech became affected, their voice hoarse, and they answered slowly; pain in the throat preventing deglutition, and deafness came on; red and black spots appeared on those parts of the body exposed to pressure; complete jaundice took place; dark-coloured blood discharged from the fauces, nose, uterus, and anus; retention of urine; and the irritation in the urethra was so great, that the patients were often obliged to nip the penis, as those unfortunate sufferers from a stone in the bladder are accustomed to do. Hiccough, coldness of the whole body, and blackness of the lips, closed this dreadful tragic scene. In some few instances, the whole train of these symptoms occurred in the space of 24 hours; in others, after the 3d, 5th, and 7th day. Dr Arejula observed them sometimes to appear on the 11th, and even on the 13th day of the fever, especially cardialgia and black vomiting. Stupor, violent and furious delirium, seized the unfortunate victims. Three patients retained their senses and presence of mind till their death. Many suffered neither from vomiting nor from diarrhoea; excessive coldness and difficulty in breathing soon attacked them. In the middle of November, petechiæ were often visible; and, at the end of this month, the fever assumed the tertian and quartan type of an intermittent, which is always considered as a sign of the decline of the epidemical malady. Those affected with this fever at Malaga suffered more from prostration of animal powers than those who had been under our author's care at Cadiz. Another difference observed was, that a profuse sweat never broke out spontaneously in this epidemic, by which, in the other epidemics alluded to, many were freed from the fever, and even in the first days of its attack. Sweat was never observed to break out at Malaga till after the administration of an emetic.

Prognosis.—The prognosis was very uncertain; it often happened when the physician considered his patient free from all danger,

danger, that he expired, after a relapse, in a few hours. If the fever began with slight chilliness followed by moderate heat, and regular exacerbations took place every 24 hours; if the pulse were strong, the tongue moist, the power of lying on either side, and of continuing in that position, and mental faculties were unimpaired, these were favourable signs. Jaundice appearing over the whole body, at any period of the disease, was looked upon as favourable, especially after the 6th day. This symptom was not so common at Malaga as at Cadiz. The debility was greater at the former of these places. Persons born or brought up in a warm climate suffered less from this epidemic than those who came from a colder country, and the danger was proportionate to their vicinity to the frigid zone. Deafness, which was always considered, by the author and others, as a good sign in all fevers, in this disease was always a bad omen; its occurrence was invariably followed by death. Vomiting and purging of dark-coloured matter, discharge of cruor from the different cavities of the body, violent cardialgia, petechiæ, &c. were all unfavourable symptoms. Those persons weakened by any chronic complaint, or by any excesses, fell a sacrifice to any attack of this fever.

Methodus medendi.—The unfortunate sufferers, who applied for medical aid, are divided by the author into four separate classes. 1. Those in the beginning of the disease, accompanied by all the regular symptoms. 2. Those who have regular symptoms, but the two first days of the fever are past. 3. Those in the first stage of the fever, with irregular symptoms. And, 4. Those advanced to the third day of the disease, in which the symptoms have been irregular from the beginning. Two general indications were pursued in each of these different stages; 1. To evacuate the bile and fœces collected in the abdominal viscera; and, 2. To excite and support the animal powers by stimulating remedies. In the first instance, if the physician be called at the commencement of the fever, Dr Arejula directs no remedy to be given till the febrile chilliness had entirely disappeared. After 10 or 14 hours, which the first stage of the disease occupies, two spoonfuls of a very weak solution of emetic tartar to be given every quarter of an hour till nausea be produced; large quantities of warm water were then to be drunk, to excite vomiting. As soon as the evacuations ceased, and these were always to be very moderate, meat broth was administered, and an hour and a half afterwards one drachm of *Pulu. Cort. Peruv.* was given and repeated every three hours, some soup being taken during the intervals. These medicines were persisted in for three or more days, until they produced the desired effect. Some could not bear the bark in substance, and to these the tincture of bark

bark was given as the powder. If the fever returned at any regular period, the bark in substance was the best, but *the dose was always diminished during the time of remission.* Thirst was allayed by vegetable acid drink, and the bowels were kept open by glysters of sea-water, or vinegar and water, used twice in the day. The vomiting was often checked by the use of these glysters. Wine, or wine mixed with water, sulphuric acid employed both as a mixture and a gargle, and sinapisms to the feet, were the other remedies commonly administered.

In the second instance, when the disease is advanced beyond the first day, no emetic was given, but immediate recourse was had to the bark, combined with gentle purgatives. Glysters of sea-water, and sinapisms to the feet, were never omitted. Oily emetics, composed of oxymel of squills, and oil of almonds, were exhibited in those cases where the symptoms were irregular at the commencement of the fever; but no emetic in the other period of the disease. Blisters were, in these instances, applied instead of sinapisms, and sinapisms were applied to the legs, soles of the feet, loins, and arms. To relieve particular urgent symptoms, as vomiting and pain in the stomach, compound medicines of Tinct. Cinchon. Liquor. Anod. Mineral. Tinct. Opii. Extract. Opii. and Æther, were sometimes administered in very small doses. Porter and beer were allowed to convalescents.

Such is the concise description of the epidemic at Malaga, and such the remedies which are reported to have been employed with great success in the treatment. Of the remote causes of this formidable disease, Dr Arejula takes no notice whatever; and he passes over, without any attention to them, those general circumstances which might give rise to the fever, or contribute to its removal. Before any decided opinion can be formed of the precise character of this epidemic, which has appeared in Spain for several years past, other documents, and more numerous facts, must be collected. From this account, although published by authority, and by particular desire, we learn nothing of the origin of the fever, nothing about the causes of it. No proof is adduced of its being contagious; and very weak arguments are offered to establish its analogy with typhus. Almost every symptom mentioned in the history is subversive of such an opinion. The nervous system was slightly affected; the animal functions were, in some instances, scarcely at all disturbed; the febrile actions assumed a regular remittent or intermittent type; the accession was sudden, and strongly marked; the cold, hot, and sweating stages were often distinctly evident: besides, the exemption of persons who had lived in warm climates, the discharge of large quantities of black bile, and the affection

affection of the liver ; all these circumstances seem to show, that the fever at Malaga was the same as the fever of the West Indies and of America ; that it is a disease of the climate, local in its origin, and most violent in its action ; that it is not typhus, not the continued fever of crowded cities and large towns, arising from accumulation of animal effluvia. The two diseases appear, in many respects, essentially different, and ought not to be confounded together.

With regard to our author's practice, he must be commended for the judicious indications laid down, but not for the manner in which these indications were attempted to be fulfilled. Some allowance may be made for the difference of climate, season, and some peculiarities in the constitution of the sick ; yet the method of cure must appear, to British practitioners, feeble, trifling, and ineffectual. What would be thought of a physician among us, leaving his patient 10 or 14 hours, at the commencement of a violent fever, without doing any thing but prepare the medicines to be administered, when perhaps it is too late for any medicine to be of any service ? In the more formidable stage of the disease, where some precious time has been lost, and the most active means only can be useful, the practice inculcated is still worse ; for Dr Arejula orders the dose of Cinchona to be lessened in the remission at the very time it ought to be increased, if it ought ever to be exhibited in any stage of this disease.

Throughout the whole of his plan of treatment, the author seems afraid of exhausting the strength of his patients, forgetful of the depressing influence of morbid actions allowed to go unalleviated and uncontrolled. His object seems to have been to palliate the most urgent symptoms, and so far his curative means might be successful ; but it is not unlikely he often flattered himself with having saved his patient, when he could only claim the negative merit of not killing him, when a good strong constitution was enabled, with or without the aid of a few simple remedies, to withstand the shock of this malady. The application of cold water and cool air seems to have been indicated by the increased temperature ; but such powerful and efficient remedies are not hinted at.

It is some consolation to reflect, that the opinion of the nature of yellow fever, entertained by those most conversant with it, is one most pleasing, because it dispels all apprehension of its ever reaching our own shore. The proper means of prevention are not, however, to be neglected ; and if ever such an unfortunate affliction should visit our happy isle, we may look forward with confidence to the most energetic and effectual means being adopted for putting an end to its ravages,

IV,

*Médecine éclairée par l'Observation et l'Ouverture des Corps.*Par P. A. PROST, du Département du Rhône. 2 tomes, 8vo.
Paris. 1804.

THE title-page of this work resembles the extravagant painting and signs hung up at a raree-show, or at an exhibition of wild beasts; it conveys an exaggerated and incorrect idea of what is to be found within. M. Prost seems to be a very first-rate showman; he makes a great noise, talks much about himself, promises and protests much, and is continually crying out, 'Walk up, gentlemen, I am now going to begin.' Those who are so unwary as to pay their money will have little cause to return thanks for their entertainment. In the preface, the author informs us, that a complete knowledge of diseased structure has been the object of his researches for a considerable time; and his attention has been more particularly directed to the investigation of febrile disorders, and to the derangements of the animal functions.

After consulting (he does not say *perusing* or *studying*) the different books on morbid anatomy, and after attending persons who devoted themselves to this branch of science, M. Prost was struck with a notion that the great want of success in all was owing to prejudice and carelessness. In order to attain different results from his own labours, he resolved to follow a contrary method. Instead of searching for the cause of diseases in the organs supposed to be their seat, he has endeavoured to make himself acquainted with all organic affections, and to ascertain the changes in the state of the solids and fluids in all diseases. This undertaking demanded on his part, he says, determined resolution, undaunted courage, and a greater love for the lives of others than for himself. Before publishing these observations, he asserts that he has opened more than four hundred bodies; many of these dissections occupied more than one day, and none less than several hours. In another part of the first volume, he states, in a long note, that the immense extent of the undertaking, the importance of collecting materials, examining patients, noting down symptoms, and the time spent in *profound meditations*, and all this accomplished within the space of eighteen months, so completely occupied his attention, that he was obliged to get a friend to correct the proof sheets, whilst he was engaged in preparing copy for the printer,

Now

Now, allowing one dissection every other day, and some intervals for other things besides *les meditations profondes*, the reader must form a vast idea of the writer's rapid execution and dispatch. A long dull poem may be composed in a few weeks; two octavo volumes of fictitious history may be manufactured in eighteen hours; but eighteen months is a short period indeed for the composition of a work on morbid anatomy, in which the most patient and cautious examination is necessary to ascertain the real appearances of the most common and strongly marked diseases. To form any accurate conclusions respecting diseases of morbid action, such as fevers and nervous disorders, in so short a time, and in so hasty a manner, is quite impossible.

M. Prost has devoted himself to public hospitals and anatomical schools; and he acknowledges great obligations which he has received from the physicians to different public establishments. In 150 dissections of persons who died from irregular fever (*les fièvres ataxiques*), he has observed nothing particular in the brain, but always found inflammation in the mucous membrane of the intestines. From this he infers, hastily and easily enough, that inflammation of the mucous membrane of the intestines is the source of all fevers, and of almost all the diseases incident to the human body. The following general conclusions are selected from a copious list of generalizations of the same sort:—Inflammation of the internal membrane of the intestines may exist without the peritoneal coat being affected: This inflammation takes place without any pain; it disturbs the animal functions: This disturbance is modified by the degree of inflammation, by the nature and effect of the irritating causes, by temperament, climate, season, and age.

The first part of the first volume is occupied with a number of questions, which it is the object of this book to answer; then follow some general reflections, and a vast many fine sentences about different organs, their functions, and their mutual relations and sympathies. Two hundred pages are filled with these *profound meditations*. The rest of the work is made up of cases and dissections, to the number of one hundred and thirteen, comprehending most of the diseases of nosology, phthisis pulmonalis, *fièvre-gastro-ataxique*, delirium, mania, apoplexy, palsy, epilepsy, &c. &c. The history of the case is generally very short, and the remedies employed are seldom mentioned; the account of the dissection is always sufficiently copious and minute, to a degree of affectation. There is method at least in all this; for the appearance of the external parts of the body is always first mentioned; then the state of parts in the neck, thorax, abdomen, and muscles. Mania and epilepsy are considered as arising, for the

the most part, from worms in the intestines, which are most frequently found in the cæcum and the arch of the colon; in one epileptic patient, who was thrown into convulsions by pressing the abdomen, three species of worms, lumbricus, teres, and ascaris, were found all together. This is the only instance of this sort which the author ever met with. He never examined the bodies of persons who had suffered from convulsions without finding inflammation of the intestines, and never opened an epileptic patient without finding worms. The contrary of this is generally observed in other places: that, however, signifies but little to Mr Proft; he seems to have read no other books except those of his countryman Bichat, for he quotes only his name, and alludes to scarcely any other author. Bichat is the god of Mr Proft's idolatry, and he probably conceives himself not inferior to his master, when he launches forth in praise of zeal for science, and declaims about universal sympathy, and the omnipotent influence of the intestines. The arrangement of this work is probably the arrangement which the author adopted himself, first to frame the hypotheses, and secondly to look out for facts, or something in the shape of facts, to support his doctrine. One remark more will be sufficient. How does it follow that every disease must arise from an inflamed state of the internal membrane of the intestines, because a redness or turgescence is generally observed in some particular parts? May not these be the effects of changes after death? At any rate, on a subject so vast and important, higher authority must be looked for, than can be fairly imputed to the author of this attempt to illuminate the obscure parts of medical science.

V.

The Principles of Botany and of Vegetable Physiology. Translated from the German of D. C. WILLDENOW, Professor of Natural History and Botany at Berlin. 8vo. p. 471. Edinburgh. 1805.

THIS volume, with which we are now presented in an English dress, is an elementary work recommended to our notice not less by the high character imported with it from its native soil, where it has superseded, we are told, all other introductions to botany of the longest standing and greatest respectability, than by the celebrity of its author, Professor Willdenow, already well known to every botanical student as the learned and industrious editor of Linnæus.

The

The principles of botany are here distinctly explained, under the following titles or sections ; 1. Terminology, 2. Classification, 3. Botanical aphorisms, 4. The nomenclature of plants, 5. Physiology, 6. Diseases of plants, 7. History of plants, 8. History of the science.

Under the head of terminology, the reader will find, besides an analysis of the anatomy of vegetables, a very full, accurate, and instructive explanation of the various terms, both general and particular, employed by botanical writers to designate the different parts of plants, their various configurations and proportions, on the precision of which the perfection of description and classification so much depends. The terminology is farther enriched by a copious index, and illustrated by upwards of 300 engravings, with corresponding references.

On the natural families of plants, and on the construction of artificial methods, Professor Willdenow proceeds, in the second section, to lay before the student the outlines of the classes of different authors, from Cæsalpinus, the first inventor of a system, to Linnæus, the author of that which is founded on the sexual parts of vegetables. Though, upon the whole, the Linnæan system is found to answer the purposes of botanical arrangement better than any yet proposed, it must be acknowledged to be far from having attained the perfection required. Its chief imperfections may perhaps be traced to the attempt to unite the principles of an artificial arrangement with the natural orders of plants.

‘ Linnæus endeavoured, from the number of the stamina, their various lengths, and different modes of connexion, to unite a natural classification with an artificial one. Hence arose some faults, which would not have happened, had he at the same time made use of the corolla as a character. For instance, in the fourteenth class are contained the labiated and ringent flowers ; but because Linnæus characterized it from the four stamina, two of which are shorter, there are some of these plants which must stand in the second class, and others in the fourth ; therefore they properly belong to this class. In the same manner, all the papilionaceous flowers are referred to the seventeenth class ; but the assumed character, viz. that the filaments are united into two sets, is not to be found in all these plants : many have the filaments united into one cylinder ; and in the tenth class stand many plants with papilionaceous flowers. These two faults are not the greatest which may be attributed to this system ; it is a more important objection, that Linnæus has mentioned the stamina in the first classes without attending to their insertion, while, in the twelfth, he remarks, that they
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are inserted in the calyx; and in the twentieth that they stand on the pistillum. In the nineteenth class are comprehended all the compound flowers, and yet he drags into the last order of this class other plants whose antheræ are only sometimes united. It is also to be regretted, that in the 21st, 22d, and 23d classes, Linnæus has taken notice of different sexes in the same plant, which he had not done before; there being many plants in the former classes that properly belong to these.'

Such are the general objections which may be urged against some of the foundations of the Linnæan classification. Attempts have since been made by later botanists to remedy some of these, chiefly by reducing some of the more defective classes, and referring them to others. By Thunberg the classes have been reduced to twenty, and by Liljebad to sixteen. This section is concluded by a view of the Linnæan arrangement of the natural orders.

The 3d section, under the title of botanical aphorisms, treats of the rules necessary to be observed in the selection of characters for establishing the genera and species of plants. The rules are laid down in the form of aphorisms, and elucidated by explanatory observations. The intelligent reader will at once perceive that these aphorisms are for the most part literal translations, but without acknowledgment, from the *Characteres* in the *Philosophia Botanica* of Linnæus. And the same observation is applicable to the next section, which treats of the nomenclature of plants. This too is copied faithfully from the *Philosophia Botanica*.

The advertisement of the editors had led us to expect much from the 5th section, which treats of the physiology of plants, an explanation of the phenomena of vegetable physiology, on the principles of the latest discoveries in chemistry. We have not, however, been able to discover any application of these principles, with which the English student is not already fully acquainted; while, on the other hand, we have observed several omissions, both of facts and doctrines, of great importance in the explanation of the vegetable functions.

In detailing the phenomena of germination, the interesting experiment of Achard and Humboldt are indeed referred to, and the necessity of the presence of atmospheric air or oxygen pointed out; but it is described as a stimulus merely, capable of exciting the activity of the seed-vessels, and its effects compared to or assimilated with those of ammonia extracted from dung. The real effects of this agent, the chemical changes which are produced in the cotyledons by the absorption of oxygen and separation of carbon, have been entirely overlooked by Professor

Willdenow.

Willdenow, who was probably ignorant of the later experiments of Cruikshank, Gough, Saussure, Woodhouse, and Michelloti. From these we now know that the oxygen of the atmosphere is absorbed, and combined with the carbon of the cotyledons forming the carbonic acid gas, which is separated and discharged during the process of germination. The production of carbonic acid was found by Saussure to be always proportioned to the quantity of oxygen absorbed.

The food contained in the cotyledons is thus chemically prepared and fitted for the nourishment of the infant plant, to which it is carried by the placental vessels. The proportion of carbon is diminished, that of the hydrogen and oxygen increased, and the farina of the cotyledon changed into a saccharine chyle. Another condition ascertained by the experiments of Ingenhouz, Sennebier, and Michelloti, to be essential to the perfect germination of seeds, is the exclusion of light; a curious fact, as this agent is so indispensable to the healthy vegetation of the plant in all other stages of its existence. Yet this circumstance too is silently passed over by our author.

To attain a knowledge of the vegetable functions, in as far as these can be illustrated by the modern discoveries in chemistry, it is necessary not only to be acquainted with the chemical history of the principles and immediate products of plants, but to direct our attention also to the nature of soils and manures, with a view to discover the food of plants, or the origin of those elements of which they are composed. The result of vegetable analysis is accordingly exhibited by Professor Willdenow, and a tolerably full account is given of the elements and productions of vegetation. In the enumeration of the natural productions or ingredients of vegetation, we remark the omission of the acetic acid and acetites, the existence of which in the sap of plants has been demonstrated by Vauquelin, and of tannin, while the gallic acid is described as a very astringent substance. The other branch of the inquiry, the food of plants, the sources whence they derive the principles of their composition, is very slightly noticed; although, on this subject, the experiments and observations of Hassenfratz, Saussure, Giobert, Kirwan, and others, furnish many important hints to the physiologist.

Overlooking these, and passing over every other difficulty, Professor Willdenow endeavours, however, to trace to their origin the carbon and hydrogen, which are without doubt the most abundant principles, and the chief, though not the only food of plants. His general theory, which we are able to collect only from detached passages of his book, seems to be, that the chief food of vegetables is water and carbonic acid, which
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are plentifully absorbed by the roots and leaves, and decomposed by the actions of these vessels, assisted by the influence of light; so that the carbon and hydrogen are fixed, while the oxygen is disengaged in the form of gas. This theory, though not perhaps sufficiently confirmed, we are inclined to regard at least as highly probable. There can be no doubt that carbonic acid is thus decomposed by the powers of vegetation, the carbon being retained by the plant, and the oxygen separated in the gaseous form. There may, however, be other sources of the carbon of plants. It is probably absorbed by the roots in the state of dissolved oxide: we know at least that, in rich soils and different manures, a large quantity of carbon exists in this state. It is equally certain that water forms a large proportion of the food of plants; that one part is decomposed, and its elements fixed in various new compositions; that the hydrogen is consolidated and retained, while the oxygen is employed in the formation of the different vegetable oxides and acids; that another part of the imbibed water is aggregated to the vegetable without change; while much the greater part is again transpired. There is no proof, however, that any part of the oxygenous gas transpired by the leaves proceeds from the decomposition of water: On the other hand, the experiments of Priestly, Sennebier, and Woodhouse, have almost demonstrated that this is entirely derived from the decomposition of carbonic acid.

Besides hydrogen, carbon, and oxygen, vegetables contain other elements, in particular earths and salts, whose origin must also be referred to the food derived from the soil, and absorbed, in a dissolved state, by the vessels of the plant. But, for a variety of particulars respecting the food of plants, which the reader will seek for in vain in the elementary treatise now under review, we must refer him to the experiments of Hassenfratz, Saussure jun. Giobert, and Vauquelin, in the *Annales de Chimie*, and *Journal de Physique*, to the *Physiologie Vegetale* of Sennebier, and Kirwan's *Essay on Manures*,

The functions of leaves of plants are more fully treated of by Professor Willdenow than the other subjects already noticed. The absorption and transpiration performed by the organs, the effects of light, and of the different gases upon them, and the changes produced on the atmosphere, are detailed with all the illustration of the latest observations. The functions of the flowers are next examined with accurate conciseness. The arguments for the sexes of plants are clearly stated, and the sexual doctrine ably defended against the attacks of a few sceptics. This leads our author to the consideration of the various theories
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which have been proposed to explain the phenomena of generation. Having briefly refuted the absurd and exploded theory of equivocal generation, and compared that of the evolutionists with the arguments for the epigenesis, or generation by a commixture of fluids for both sexes, he gives the preference to this last doctrine, which, he thinks, best accounts for the phenomena, and also affords any explanation of the resemblance to both parents in the case of hybrid animals and plants.

‘The system of pre-formation, which in former times was much in vogue, is not, even by its most zealous admirers, much insisted on in the vegetable kingdom. Spallanzani, who, in animals, by means of tedious experiments, attempted to prove the pre-existence of the animal before the impregnation of the ovum in the ovaries, sincerely confesses, that there is no pre-existence of plants like that in animals.

‘The *Epigenesis*, or generation by a commixture of the fluids given out both by male and female, is what most physiologists now assume as the only true theory of generation both in the animal and vegetable kingdoms. Koelreuter confirmed it by numerous experiments, of which we shall mention one only : He took of the genus *Nicotiana*, the *Nicotiana rustica* and *paniculata*. The first he deprived of all its stamens, and fecundated its pistil with pollen of the last species. *Nicotiana rustica* has egg-shaped leaves, and a short, greenish yellow corol. *Nicotiana paniculata*, a stem half as long again as the former, and roundish, cordate leaves, and much longer, yellowish green corols. The bastard offspring of both, kept in all its parts the middle betwixt the two species. He tried the same with more plants, and the result accorded perfectly with the first.

‘Were we therefore to admit the *animalcula feminalia*, the hybrids could necessarily not have differed in their form from the male plant ; and, on the other hand, were the evolution system founded in nature, they would have the same form as the female plant. The hybrid, however, was a medium between both ; it therefore certainly adopted some parts both from the father and mother, and was formed by Epigenesis.

‘Koelreuter, however, could only obtain hybrids by intermixing similar plants. Dissimilar plants never produced them, even though, according to our systems, they belonged to one genus. It appears that nature thus avoids unnatural mixtures.

‘The instance of mules not generating, as it was once believed at least, induced many philosophers to make it an axiom, that hybrids are barren. But we now know a good many instances in Zoology of hybrids being very productive, and even the instance of mules does not prove any thing, as in warm climates they are sometimes prolific.

‘Koelreuter likewise found hybrids of various species of tobacco and some more plants to be sterile, the pistil in them being very perfect, but the stamens not completely formed. But there are now
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several instances of hybrid plants which retain their original form, and propagate themselves. I shall only mention a few with their parents :

Sorbus hybrida. The mother was *Sorbus aucuparia* ; the father, *Crataegus Aria*.

Pyrus hybrida. The mother was *Pyrus arbutifolia* ; the father, *Sorbus aucuparia*.

Rhamnus hybridus. The mother was *Rhamnus alpinus* ; the father, *Rhamnus Alaternus*.

‘ What mixtures do not the species of *Pelargonium* produce in our gardens ? All plants of the 21st, 22d, and 23d classes of Linné mostly generate prolific hybrids. Linné wrote a particular treatise on hybrids, in which he attempted to explain the origin of some particular plants ; but unfortunately he has given nothing but hypotheses, his observations not according with experience.

‘ Should it not, from the observations made with regard to the hybrids of the animal and vegetable world, be laid down as a rule, admitting some exceptions, that all hybrids are productive, but that some only want a warm climate to unfold the male semen ? I do not attempt to establish this rule as quite certain ; I should be happy, on the contrary, would philosophers consider this subject more accurately, and attend more to the hybrids of different climates, on purpose to settle the point.

‘ But Koelreuter made some experiments, which put the doctrine of *Epigenesis* beyond all doubt. I shall only mention one of his observations as an instance. He obtained ; as we have seen, a hybrid from *Nicotiana rustica* and *paniculata*. *Nicotiana rustica* was the female plant, *paniculata* the male. The hybrid, like all the others which he brought up, had imperfect stamens, and kept the middle between the two species. He afterwards impregnated this hybrid with *Nicotiana paniculata*, and got plants, which much more resembled the last. This he continued through several generations, till in this way, by due perseverance, he actually changed the *Nicotiana rustica* into the *Nicotiana paniculata*. By those and other experiments often repeated, and made in various ways and upon other plants, it seems clearly established, that there is no pre-formation in plants.

‘ According to the theory of *Epigenesis*, then, the fluids of the male and female are mixed, and an offspring is obtained from these two, which, in form and properties, resembles both father and mother.’

‘ But there have been philosophers, as well in former as at the present times, who in plants have altogether denied the existence of sexes. Smellie seems to favour this opinion, because he repeated an experiment of Spallanzani’s with a female plant of hemp, which he kept remote from all male plants, and notwithstanding obtained, though in a small quantity, perfect seeds, and hence he deduces his arguments. But indeed such experiments are too difficult to be free from error, and who can assert that he has not, even with the greatest

attention, been deceived? Spallanzani placed his female plant in a room, to which no insects could get, and, for the greater security, likewise covered it. But could he, before the first flower appeared, distinctly enough distinguish the female plant of the hemp? And could not a very small minute insect escape his eyes, and effect a fecundation? Besides, do we not find on female plants sometimes a few male flowers, which perhaps was here the case? The few seeds which he got prove, that a few single parts were necessarily fecundated. But even supposing that in hemp the female plant produces ripe seeds without fecundation, can we draw any just conclusion from this single plant to any other vegetable? We have in the animal kingdom an instance in the aphid, an insect which, without the aid of a male, propagates itself till autumn. But who would, from this isolated observation, founded as it is in truth, attempt to deny in all animals the existence of a difference of sex? Since Oleditsch first, in a botanic garden, impregnated the *Chamaecrops humilis*, which is a female plant with pollen of the male part, which Kochreuter sent to him from Karlsruhe, and obtained ripe seeds and young plants, which before never had been possible; thousands of similar experiments have been made, which put it beyond doubt that two sexes exist in plants. Every person may indeed easily convince himself of the fact, by repeating such experiments on the species of melon and gourd, and every where in the vegetable kingdom he will find two distinct sexes.*

In the general anatomy of vegetables Professor Willdenow closely follows Hedwig, and minutely describes the *vasa adducentia*, *reducentia*, *spiralia*, and *lymphatica*, even to their valves, assigning to each class its particular functions with more precision, we fear, than is warranted by the accuracy of observation. The motion of the sap is properly referred to the irritability and living pores of the vessels; and with regard to the course of the fluids, he seems to favour the opinion of a real circulation. That there are ascending and descending fluids cannot be denied, the latter being derived from the former, after having undergone the changes of vegetation in the ascending vessels, and in the leaves; but it is more than doubtful that these ever again return upwards, or communicate a second time with the ascending sap-vessels; a circumstance implied in the idea of a circulation. The general phenomena of vegetation, and particular observations, strongly militate against the doctrine of the circulation of the sap; and, excepting the analogy of animals, we know not a single argument for its existence. The experiments, indeed, of Mr Knight seem decisive on the point, as they clearly prove the want of communication between the descending and ascending vessels*. The descending fluids, or proper juices of plants,

* Philosophical Transactions, 1801.

plants, seem wholly expended in the secretions and formation of new parts.

A subject of much general importance, and exciting at present no small degree of local interest, is the diseases of plants, of which a pretty full account is given in the 6th section. 'The diseases of plants,' it is observed by Willdenow, 'are either such as are brought on externally only, by accidents and the like, or such as originate from a corruption of the sap, and other internal affections destroying organization itself: To the first kind belong wounds, fractures, fissures, preternatural defoliations, hæmorrhagy, mildew, honey dew, rubigo, lepra, galls, the folliculus carnosus, contortions, warts, moles, squamations, the bedeguar. To the second class of diseases belong chlorosis, icterus, anasarca, phthiriasis, verminatio, tabes, deliquium, suffocatio incrementi, exulceratio, carcinoma, necrosis, gangræna, ustilago, mutilatio, monstrositas, sterilitas, abortus.'

Of each of these a short description is given; the causes of the disease are enumerated, and the method of treatment pointed out. These observations, although highly interesting, do not, from the short aphoristic manner in which they are delivered, admit of abridgment or analysis. We shall content ourselves, therefore, with selecting an example or two for the satisfaction of our readers.

'*Albigo*, or mildew, is a whitish, thinnish coating of the leaves of plants, which often causes their decay. It is produced by small plants, or by insects. The first kind appears on the leaves of *Tussilago Farfara*; *Humulus Lupulus*; *Corylus Avellana*; *Lamium album*; *purpureum*, and others. It is a species of fungus of great minuteness, which covers the leaves: Linné calls it *Murcor Erysiphe*.

'The second kind is a whitish slime, which some species of aphids leave upon the leaves.

'As soon as there is the least appearance of mildew, all the leaves stained with it should be plucked off and burned. In scarce and delicate plants, the leaves ought to be washed. But where it is produced by aphides, a weak decoction of the dry leaves of tobacco will be found most serviceable.

'If, on the contrary, all parts of a plant are full of it, and the plant is hard and of long duration, then the parts must, according to what plant it is, be taken off. If it is an annual, and of great delicacy, it will be best to wash it with a brush dipped in the decoction of tobacco, and afterwards to expose it to the open air.

'*Melligo*, or honey-dew, is a sweet and clear juice, which, during hot weather, is frequently found upon the leaves, rendering them sticky, and, especially when it does not rain, causing them to fall off. This sweet matter is likewise secreted by aphides, from peculiar glands at the anus.

‘ In tender plants, washing with water, or with the above decoction, is of great benefit ; the fumes of tobacco likewise kill the insects.

‘ *Rubigo*, or a red matter of the appearance of rust, is seen frequently on the leaves and stems of many plants. It consists of yellow or brown stains, which when touched give out a powder of the same colour, which soils. Microscopical examination has shown, that this rust-like matter consists of small fungi, which are called *Aecidium*, and the seeds of which form this brownish powder. We find them frequently in the leaves and stems of *Euphorbia Cyparissias* ; *Berberis vulgaris* ; *Rhamnus catharticus* ; and some gramina ; of wheat, oats, &c. If they are very numerous, especially in the different species of gramina and corn, consumption is the consequence.

‘ Little is to be done against this affection. In the species of wheat, oat, and the like, some have recommended to moisten the grain, before sown, in salt or lime water, or to sow grain from countries where this disease does not prevail. Palliatives, or preservative means, are of no use.

‘ *Chlorosis* is that affection of plants, when their green colour entirely disappears, and all their parts grow whitish. It arises from this circumstance, that these plants cannot excrete their oxygen, which therefore becomes accumulated. There are three causes of the disease, want of light, insects, and bad soil. We saw before, that a healthy plant emits oxygen gas in sun-light, and that the accumulation of this gas, when not emitted, makes the green colour disappear.

‘ As soon as a plant is deprived of light, it cannot disengage the oxygen ; hence it assumes a white colour, which, however, instantly goes off, when the rays of the sun are again admitted. This is the reason why plants, in dark rooms, between great masses of stone, in deep clefts of rocks, beneath the dark shade of shrubs and trees, &c. grow pale, and of a whitish colour.

‘ Insects which bite off the radicles of plants, or even nestle in them, and consume their food, debilitate their vessels, render them insensible of the stimulus of light, and at last chlorotic. It occurs very frequently in *Secale cereale*. No remedies are of any use.

‘ Improper soil, from which plants do not get food enough, not unfrequently brings on this affection. In such cases plants may sometimes recover by change of soil.

‘ *Ustilago*.—This singular variety of gangrene occurs most frequently in the species of gramina, rarely in other plants ; sometimes in *Scorzonera*, *Tragopogon*, &c. It arises from a small fungus, which occupies the whole ear (*arista*), which therefore cannot form itself properly. Every part of it, on the contrary, becomes a black, soiling mass. Moist seasons are most favourable for it, and its progress is, under such circumstances, very rapid.

‘ That corn may not be affected with it, such grain only should be sown which has not been kept in damp places, nor has been got from where the disease prevailed. Neither should the grain be placed too deep in the ground, especially where the soil is fat, and the ground

ground moist. When, however, it has once begun, the plants diseased cannot be cured. In tender and scarce garden plants, something may be done by amputating the diseased part just forming. But this would be an operation too troublesome and precarious.'

The history of plants, which forms the subject of the 7th section, comprehends a view of the influence of climate upon vegetation, of the changes which plants have probably suffered during the various revolutions of the earth, of their dissemination over the globe, of their migrations, and of the provisions made by nature for their preservation. This section contains many excellent observations and ingenious speculations, which our limits forbid us noticing in this place.

The volume is brought to a close by the history of the science. We think highly of this historical sketch, which is divided into eight epochs, viz. from the first origin of the science till Brunfels; from Brunfels till Cæsalpinus, comprehending the period from 1530 to 1583; from Cæsalpinus till Bauhin, 1583 to 1593; from Bauhin till Tournefort, 1593 to 1694; from Tournefort till Vaillant, in 1717; from Vaillant to Linnæus, 1735; from Linnæus till Hedwig, 1782; from Hedwig till the present time, 1805.

It contains short but instructive notices of the life and writings of every botanical author, with references to their works, which must prove highly useful to the student, who, left without such assistance, is often at a loss where to seek the information he wants.

VI.

Cases of two extraordinary Polypi removed from the Nose, the one by Excision with a new Instrument, the other by improved Forceps; with an Appendix describing an improved Instrument for the Fistula in Ano, with Observations on that Disease, illustrated with a Copperplate. By THOMAS WHATELY, Member of the Royal College of Surgeons in London. 8vo. 42 pages. 1805.

THE title sufficiently bespeaks the contents of this short pamphlet, with which the reader may be gratified for the trifling expence of two shillings. He will perceive, too, that Mr. Whately can start game for himself, and that he no longer contents himself by poaching in ground which had just been coursed over by Mr. Home. An observation we make for the be-

nefit of those who have invidiously remarked, that Mr Whately's essays so regularly followed those of Mr Home on the same subject, that if the latter again published, they could, with tolerable confidence, foretel a counter treatise from the pen of the former.

The polypi, an account of which is given in the pamphlet now before us, were remarkable chiefly for their extraordinary size, and one of them for the extent and strength of its attachment, which rendered all attempts to remove it by the forceps insufficient, and by the ligature impracticable. These, therefore, having failed, Mr Whately directed his attention to the excision of the polypus. There was not room sufficient to admit the application of scissors, as, after their introduction into the nostrils, they could not be opened. In using the knife, the difficulty was to direct and confine its edge to the parts to be divided. The method successfully employed by Mr Whately is very ingenious, and will, we doubt not, be found useful in other similar cases, where, from the situation of a tumour, the surgeon, in conducting his knife, can neither be assisted by the eye nor touch.

A ligature was first passed in the usual manner round the base of the polypus, and the ends brought out at the nostrils; the knife, defended by a sheath, which could be removed after its introduction into the nostrils, had a hole at its point, through which one of the ends of the ligature was passed, the other end being held firm by an assistant; and in this way it will readily be perceived, the knife could, by sliding along the ligature embracing the tumour, be accurately applied to the part to be divided. 'The conducting thread being first passed round the polypus, and one end carried through the eye at the knife's point, it was then unsheathed; an assistant held one end of the thread, while I took hold of the other with my left hand, and began to cut the polypus. The operation was continued till the patient grew somewhat faint, through the loss of blood. At this time, Mr Ramsden, putting his finger into the patient's fauces, in order to ascertain the state of the polypus, felt the end of the knife; upon doing the same myself, I found that I had cut more than half way through the polypus. I immediately proceeded, keeping the knife in the same direction in which it was introduced through the nostril, and completed the excision.' The polypus now dropped into the patient's mouth, and was removed by the fingers.

A good deal of blood was lost, but the hæmorrhage was soon stopped by the usual means. The cut surface of the tumour, a few hours after the operation, measured at its broadest diameter two inches, and at its narrowest an inch and three eighths.

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By the ingenuity of Mr Whately, his patient was thus not only freed from an enormous polypus, which no force used with the forceps had been able to move, but relieved also from many distressing and dangerous symptoms, which attended its growth. He had suffered repeated losses of blood; his respiration had been greatly affected; but chiefly remarkable both in this and in the other case related by Mr Whately, were the paroxysms of drowsiness and stupor to which the patients were liable, and by which they were rendered almost incapable of any business. The one was apt to fall asleep while dressing himself, while serving customers in his shop, and, even while riding on horseback, he was indebted to the good-natured passenger who stopped his horse in the street to awaken him. The other, a hair-dresser, was still more unlucky; he would fall asleep while dressing a gentleman's hair, on whose devoted head the hot curling irons have dropped from the unconscious hands of the drowsy friseur. 'He has been known likewise to fall asleep while setting a razor, and has frequently let the razor drop on the floor, especially when he has attempted to continue the employment longer than the setting a second razor at one time.'

The observations on the fistula in ano are unimportant, if we except some remarks on certain inconveniences attending the crooked bistoury, the difficulty of insinuating its point into the orifice in the gut, in oblique sinuses, from the edge of the knife being unguarded during the examination, inconveniences which it is proposed by Mr Whately to remedy, by guarding the bistoury with a sheath, which is to be removed after the knife is fairly introduced through the sinus, and its point fixed with the finger in ano. Mr Whately's bistoury has also a stout unjointed handle. 'It is in fact nothing more than a crooked bistoury without a joint at the handle, having a sheath attached to it by a screw fixed at the place where, in the old instrument, the joint was situate.'

This instrument, armed with its sheath, is to be introduced in the usual manner. 'When the point of the knife is in contact with the operator's finger, an assistant, by a turn or two of the screw, sets the sheath at liberty, and withdraws it immediately. The Surgeon then finishes the operation.'

VII.

Elements of Galvanism, in Theory and Practice ; with a comprehensive View of its History, from the first Experiments of Galvani to the present time : Containing also Practical Directions for constructing the Galvanic Apparatus, and plain systematic Instructions for performing all the various Experiments ; illustrated with a great number of Copperplates. By C. H. WILKINSON, Lecturer on Galvanism in Soho-Square, Member of the Royal College of Surgeons, &c. 2 vols. 8vo. London. 1804.

PHYIOLOGY, or the science which embraces the general doctrines of organized or animated beings, the subjects of medical science and of medical art, is inseparably allied to all the others. The phenomena of life cannot be understood or explained without a previous knowledge of the general laws which govern every other part of the universe. Nor is this surprising, since organized beings, however characterized by their particular modes of existence, are influenced by external agents, with which a constant and reciprocal action is maintained, and since their material elements spring from and return to one common source. Many of the phenomena of life, therefore, arrange themselves under the laws of mechanical, a still greater number under those of chemical philosophy, the application of which to physiology has thrown much light on the economy of particular functions. Every discovery in physical science thus becomes important to the physiologist ; and physicians naturally enough expect to find in it some elucidation of the animal functions, or some useful application of it in the cure of diseases. Accordingly, no sooner had Galvani made that happy discovery which bears his name, than attempts were made to raise, on the phenomena which had been observed, an hypothesis which might solve the difficult problem of muscular motion ; and hardly were the powers of Volta's pile understood by physicians, when disease sought relief from the Galvanic energy.

In every point of view, therefore, Galvanism has become closely connected with the healing art, and every practitioner would desire to possess all the knowledge of this power which the rapid progress of discovery has unfolded. This knowledge, diffused through a great number of volumes in different languages, has been collected into one view by the industry of Mr Wilkinson, who, it is well known, has dedicated much of his time to this

this new branch of science. Many of our readers have, like us, witnessed the effects of his very powerful apparatus, and been entertained by his brilliant experiments.

The volumes under consideration contain a very full, and, we think, faithful analysis of the different publications which have appeared on the subject of Galvanism; the history of the various discoveries made by the continental and British philosophers, the different opinions and theories which have been entertained or proposed, are stated and examined, while the principles of the science are concisely explained by our author.

Electricity Mr Wilkinson considers as a principle universally, but not equally, diffused. All bodies contain more or less of it; and if no signs of electricity are apparent, it is because all the substances contain precisely such a quantity of the fluid as is proportionate to their capacity. Different modifications of bodies, however, give occasion to changes of their capacities for the electric fluid, which then becomes sensible, being given out by the body, if its capacity is diminished, or flowing into it from other neighbouring ones, if its capacity be increased. Thus, when a cylinder or plate of glass is rubbed, its constituent parts undergo such a change, that the resistance to the admission of electricity is diminished, and the fluid is supplied to it by the surrounding air, and by the cushion, if it communicates with the earth by a conducting substance. Various other changes, both chemical and mechanical, to which bodies are subject, give occasion to corresponding changes in their capacities, and to consequent electrical phenomena. The heating and cooling of bodies, changes of composition, the rarefaction and condensation of the atmosphere, the evaporation and precipitation of aqueous fluid, the oxydation of metals, are illustrations of Mr Wilkinson's theory of combined electricity. In these examples, the capacities of the bodies are changed, and the electrical fluid becomes apparent in its passage to and from them, according as their capacities are increased or diminished.

As bodies differ in their capacities for caloric, so they differ from each other in their capacities for electricity.

The best conductors, Mr Wilkinson thinks, contain the greatest quantity of electricity, while those are the best non-conducting substances which contain the least.

Conducting bodies will give signs of electricity, if, by any change, their capacity is altered. Thus a metallic substance which is a good conductor, when oxydated, is a very imperfect one; and, in passing to the state of oxide, electricity is given out. Water in the fluid state is an excellent conductor; in freezing, it gives out electricity, and becomes a non-conductor; converted
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into vapour, its capacity for electricity and its conducting power are both increased.

The distinction of two kinds of electricity, a vitreous and resinous, or positive and negative, is rejected by Mr Wilkinson. All the phenomena are referable to the motions of one fluid. When the capacity of a body is increased, and the electrical fluid moves towards it, we have signs of what has been called negative electricity; when a body is parting with electricity, of positive. Positive and negative electricity are merely relative proportions of the same principle.

On these principles, and on the resistance opposed to the passage of the electric matter by the air, the electrical phenomena are explained with tolerable success by Mr Wilkinson. The theory of combined electricity, and of changing capacities, bears the strictest resemblance, *mutatis mutandis*, to the modern doctrine, which so happily explains the motions and combinations of caloric, from which, indeed, the theory seems borrowed. It must be confessed that this theory embraces a greater number of facts than any other hitherto proposed, and alone accounts for the electrical appearances which are manifested in a variety of chemical changes.

Though Galvanism and electricity be here considered as the same principles, Mr Wilkinson is of opinion that, according to the present state of our knowledge, they may be thus distinguished:—Galvanism is the portion of electricity which forms a component part of the conducting body, in the act of undergoing a change in its capacity from a greater to a less state; while electricity is the result of a temporary change in non-conducting bodies, inasmuch that their capacities become, by attrition, momentarily increased. Galvanism is never produced by any changes in non-conductors, while electricity is accumulated by them alone.' We are not perfectly satisfied with the accuracy of this distinction; at least there are some phenomena, commonly regarded as electric, which, by the terms of this definition, should arrange themselves under the Galvanic. Aqueous vapour, for example, is a conductor, and, in passing to the state of water, its capacity is diminished; yet the electricity which is given out during this change has never been considered as Galvanic.

With regard to metals, a simple Galvanic series formed from them generally consists of two, the one more oxydable than the other, with a moist substance interposed, or of a single metal so placed as to have one surface only undergoing the process of oxydation. Now, whenever a metal becomes oxydated, its capacity for electricity is diminished, a portion of its combined electricity

electricity is given out, positive signs of electricity are evinced, and a sensible electrometer will be made to diverge with the same electricity as is produced by excited glass. In consequence of the oxydation of one of the surfaces of the metal, its natural electricity becomes disturbed, and the direction in which it will have a tendency to move will be towards that surface which is undergoing the change in capacity. 'If a plate of zinc be supposed to be divided into a number of lamina or strata, the superior stratum being thrown into a state of readily parting with its combined electricity, and the successive strata being similarly acted on, the electricity in the plate will be thrown into motion, and the direction will be, from the opposite side of the plate, towards the side which is undergoing a chemical change. In consequence of this disturbance, the side of the plate of zinc which is not exposed to moisture, or to the action of any fluid, will be in a negative state; or, in other words, will contain less than its natural quantity of the electric fluid, while the other will be in a positive state of electricity.

'When a conducting medium is placed between both sides of a plate of zinc, then an equalization is effected. The surface under the chemical action of the fluid being freed of its excess of electricity, and the other side recovering its original state, the oxydifying process again goes on, and thus continues, so long as the metallic ore completes the circuit between the sides.

'As zinc undergoes this change with so great a facility, in order to produce a perfect Galvanic combination, it is necessary to guard and defend one of its sides from any change by coating it with a metallic substance, the capacity of which for electricity is not so easily altered; such as gold, silver, copper, &c. These metals, when soldered to zinc, are not otherwise useful than because they are less acted on by the fluid than the zinc would have been; and hence, as to the state of electricity, they may be simply deemed to accord with the zinc surface with which they are united.'

What we have here quoted will be sufficient to give our readers some notion of what may be called the chemical theory of the Galvanic pile, in opposition to the mechanical or motoelectric theory of Volta, which attributes the whole phenomena to the displacement of electricity by the simple contact of two dissimilar metals, and considers the interposed fluid in the pile as performing the office of a conductor merely.

During the action of the Galvanic pile, it is certain that the chemical changes to which the evolution of electricity, in the former theory, is referred, are constantly going on; and that the production of the electric fluid is nearly proportionate to these changes.

changes. A strong objection, too, to the Voltaic theory arises from the interesting discovery of Mr Davy, that two metals are not necessary to the construction of an efficient Galvanic series; that a series formed of plates of one metal only, so arranged that one side only of each plate shall suffer oxydation, while the other side is protected from change, sets the electric current equally in motion. On the other hand, it is established beyond the possibility of doubt, by the experiments of Volta, that if two dissimilar and insulated metallic plates be brought into contact, and afterwards separated, they will be found to be differently electrified, the one positively, the other negatively. If copper and zinc be the metals employed, the zinc positively, and the copper negatively, so that the developement of the electric fluid is proved to be quite independent of any humid conductor, and consequently of chemical change. When humid substances are interposed, it is also well known that the oxydable metal is more rapidly oxydated in consequence of the displacement of the electricity, occasioned by the contact of the dissimilar metals, than it would be if exposed alone to the same chemical agent: and in every Galvanic series, that the quantity of oxydation is proportionate to the force of the electric current developed by the apparatus.

It must be confessed, indeed, that we have no means of determining satisfactorily the priority of these two events, in the Galvanic battery, the oxydation of the metallic plates, and the developement of the electric fluid, are so perfectly synchronous.

While we admit the evolution of electricity as an effect of the oxydation of one side of the metallic plate, and consequent change of its capacity, we are induced, from the experiments of Volta, from the history of the doublers of electricity, and from the more rapid oxydation of zinc exposed to moisture, in contact with another dissimilar metal, than when exposed alone to the same moisture, to attribute the original displacement of electricity to the simple contact of dissimilar metals or dissimilar surfaces of the same metal, whereby the two metals, or the two sides of the same metal, become differently charged. This is certainly true, at least of dissimilar metals; but when the series is arranged with interposed humid substances by the oxydation of one of the metals, there is a greater developement of electricity, in consequence of this chemical change, so that the oxydation and the electrical current seem mutually to affect each other; a more rapid oxydation being caused by the electrical current, while the electricity itself is more rapidly evolved in consequence of the oxydation.

The opinion of Volta, therefore, in so far as it supposed the
interposed

interposed fluid in the pile to act merely as a conductor, is now ascertained to be erroneous. Those fluids produce the most active effects, which most powerfully act upon and oxydate the metallic substance; and the evolution of electricity is proportionate to the oxydation.

From an early experiment of Galvani, afterwards repeated by Humboldt, Aldini, Kellie, and others, it appeared that Galvanic combinations might be formed by animal substances alone; that strong muscular contractions are produced in the limbs of a prepared and insulated frog, by the simple contact of its own muscles and nerves, or when the arc between them is completed by other animal conductors; and that these contractions are occasioned by the passage of electric matter from one of these organs to the other through the nerve. These facts furnished materials for ingenious men to build a most absurd theory of muscular motion, and even of sensation. Our readers need not be reminded of the hypothesis of Galvani, Humboldt, and De La Matherie, which later experiments and observations have so completely refuted.

The phenomena are easily explained on the principles of combined electricity, and the changing capacities of conducting substances, when their constituent elements undergo any new modification.

The separated and prepared limb of a frog forms the most delicate electrometer; and its limbs are thrown into convulsions by the passage of the smallest power of electricity, by that minute portion even which is evolved by its own decomposition, and set in motion on completing the circle between the muscle and nerve.

'Animal substances,' Mr Wilkinson well observes, 'as conductors of electricity, have their capacity proportioned to their conducting powers. No change can be induced in these substances without an adequate change in their capacities. Both the muscular fibre and the nervous substance, in their healthy living state, and connected with the sources by which their energies are preserved, are, with respect to electricity, in a precise balance with each other. When a portion of animal substance is detached and separated, changes are induced, and decompositions effected. In cold-blooded animals, the process being very slow, the muscular fibres remain for a long time susceptible to so pervading a stimulus as electricity. When the substance is immersed in a solution of the muriate of soda, the nervous and muscular parts seem not to undergo equal changes. The part which is most rapidly acted on will leave the other in a negative state of electricity, and, on the communication being formed, convulsions will be produced.'

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This, which we consider as the most satisfactory explanation of these curious and interesting phenomena, appears to us very happily illustrated by the experiments of Dr Kellie, with which, however, our author does not appear to have been acquainted.

Dr Kellie observed, 1st, 'That the prepared legs are often excitable by the detached leg of another frog, when no contractions can be produced by the contact of the muscles and nerves of the prepared frog itself. 2^d, That the same prepared frog may be excited by completing the arc between its muscles and nerve by the separated leg of one frog, and remain insensible to the application of the leg of another frog; or excitable by one piece of animal substance, and not by another, as by pieces of fish, beef, mutton,' &c. Whence he concluded, that when animal substances are employed to close the circle between the nerve and muscles of a prepared frog, they do not always perform the office of mere conductors, nor act in the ratio of their conducting powers. 3^d, 'That when the prepared frog was immersed under water, no effect took place on completing the arc between the muscles and nerve, either immediately or mediately, by another animal conductor immersed along with it *.' These observations clearly demonstrate, we think, that the electrical fluid is disengaged by all animal substances during their decomposition; that it exists in an unbalanced state, sometimes in the prepared leg itself, and sometimes in the other animal substances employed to complete the communication; and that, in some experiments, it is positive in the one, and negative in the other; but that no accumulation can take place in the living subject, where no organs are provided for the purpose; and where the muscles and nerves are every where connected, every where surrounded, by conducting solids and fluids.

After all the discoveries which have been made, there still remains much difficulty in accounting for the phenomena of electric animals. The developement of electricity we easily comprehend; but we are still at a loss to account for its accumulation and discharge at the will of the animal. Many ingenious hypotheses have been indeed suggested, but farther anatomical researches and additional experiments are still wanting to enable us fully to understand the play of those singular organs with which the electrical fishes are furnished. They bear, indeed, a striking resemblance to the Galvanic apparatus in the arrangement of parts; but every Galvanic series becomes inactive when surrounded with fluids, or when all the pieces are connected by conducting media, by means of which the electric equilibrium is maintained.

* Dissert. Inaug. de Elect. Animal. Auctore Georgio Kellie.—Edit. 1809.

maintained. On this difficult subject, Mr Wilkinson contents himself with observing, that 'on any action of the animal, the sides of the cells having been brought nearer to each other, a change as to their state of electricity results from their separation.'

After considering the phenomena of electric animals, Mr Wilkinson indulges himself in some very singular speculations on the functions of respiration and circulation, which we shall very shortly notice.

He begins by an examination of Dr Crawford's experiments and calculations, and discovering in these several inconsistencies and errors, he concludes against the whole theory of that ingenious philosopher. And from some calculations into which he enters on the quantity of heat which the oxygen consumed in respiration can furnish, compared with some experiments on the rapid cooling of water, he endeavours to demonstrate, that this source is inadequate to the support of animal temperature.

In short, rejecting all the light which has been thrown on this important function by the discoveries of the British and French philosophers, he considers respiration as a Galvanic operation, boldly representing the lungs as an electric apparatus, drawing electricity from the air, and communicating it to the blood, which is thus enabled to stimulate the heart to contraction.

The cells of the lungs, he observes, 'are similar in structure to the electric organs of the torpedo, with this difference, that the electric charges of the pulmonary cells are enlarged by the pulsatory current of the blood, while the apparatus of the torpedo requires an external circuit.'

This resemblance, however, is surely very remote. The lungs and the electric organs of the torpedo appear to us to have nothing in common but the name, by which their structure is vaguely marked. Both, indeed, are said to be cellular, a term very loosely employed by anatomists. To admit, without other proof, the electric charges of the pulmonary cells, is to beg the question, unless, indeed, these charges can, as Mr Wilkinson seems to suppose, be inferred from the observation of Volta and Read, that the air of expiration is negatively electrified. But the electricity of the air is modified by so many circumstances, especially where there is any change of composition, that no conclusion in favour of the hypothesis can be legitimately inferred from that observation. It is perfectly independent of any organic provision made in the structure of the lungs, farther than is necessary for completing those chemical changes which the blood and air undergo, and of which the electrical state of the expired air is the direct consequence. The same philosopher,

pher, Mr Read, who made the observation on the negative state of electricity of the air of expiration, observed also that the air of dunghills was in the same state; but no one would hence infer Galvanic structures, or electric charges, in these masses of decomposing matter.

'As fluids,' Mr W. continues, 'are but imperfect conductors for the weak intensities produced by these processes, nature has charged the venous blood with carbon, which being an excellent conductor, superior indeed to any other connected with the air-vessels, through this medium the electric charge passes; and being instantly conveyed to the heart, stimulates that muscle to action.' This is being indeed very particular, and, we think, very fanciful. Without disputing, however, the merits of the venous blood as an electric conductor, or inquiring how far, in this respect, it surpasses the arterial, it will be sufficient perhaps to remark, that if nature have charged the venous blood with carbon, for the purposes here assigned by Mr Wilkinson, her labour has been unquestionably thrown away. For, through the medium of this carbonated venous blood, the electric charge cannot pass from the lungs to the heart, and stimulate it to action. When the blood has passed through the lungs, and has arrived at the left heart, it is no longer venous but arterial, and has lost that charge of carbon on which its transcendent conducting power is supposed to depend. When the venous blood again arrives, after having passed the aortic circulation, at the right side of the heart, it cannot, on the terms of the hypothesis, be supposed charged with the electric fluid derived from the air in its former passage through the pulmonary vessels.

Here, indeed, for the first time, Mr W. appears to have been intoxicated with his subject, and misled by the idols of his contemplation, *the idola specus*, which, Lord Bacon informs us, take their rise 'ex educatione, et consuetudine, et fortuitis.' 'Adamant homines,' he continues, 'scientias, et contemplationes particulares; aut quia auctores et inventores se earum credunt, aut quia plurimum in illis operæ posuerunt, usque maxime assueverunt. Hujusmodi vero homines, si ad philosophiam et contemplationes universales se contulerint, illas ex prioribus phantasiis detorqueant et corrumpunt.'

Still more singular and paradoxical will many of our readers deem Mr Wilkinson's speculations on the circulation of the blood. He denies that the red blood can pass from the arteries into the veins in a healthy subject; nor can he be persuaded that the colouring part of arterial blood again returns into the veins. The colour of the arterial is indeed different from the venous blood, and this change it may have undergone in the extreme

extreme branches of the arterial system before it enters the veins. But this does not appear to be our author's meaning.

'The arteries terminate in four different ways; the most common way is by branches, so very tenuous and minute as not to admit the red blood, and which are generally termed seriferous vessels. These vessels ultimately unite with the origin of the veins. The second mode of termination is into cells. The third is on the surface, where the exhalents are formed; and, fourthly and lastly, the arteries enter the excretory ducts of the glands.'

The red globules of the arterial system are, according to our author, entirely devoted to the restoration of the continual loss of the system, and to the formation of new parts. The opaque blue purplish colour of venous blood is entirely derived from the chyle poured into it from the thoracic duct.

'Thus,' he concludes, 'the circulation is no way general, and the colourless part of the blood can alone be said to undergo a regular circulating course.'

We will not anticipate the judgment of our readers on these strange opinions of Mr Wilkinson. The subphosphate of iron, on which the colour of the blood depends, is found equally in the arteries and veins; the venous may be made to undergo the arterial change of colour, and the arterial the venous, out of the body; and observations on the circulation in the pellucid parts of animals render visible the passage of coloured blood from the the arteries to the veins.

To the physician, by far the most interesting branch of Galvanism is, without doubt, its application to medicine. And our readers will be amply gratified by a perusal of what Mr Wilkinson has collected on this subject. In the first volume an account is given of the trials which have been made by the continental physicians of the use of it in the cure of diseases; and, in the concluding chapter of his work, our author gives us the result of his own experience. His observations are delivered with becoming caution and much good sense, without prejudice or suspicious enthusiasm.

'In cases of *paralysis* from organic defect, or from pressure on the brain, the stimulus of Galvanism is useless or prejudicial. But where loss of motion and sensation arises from defective energy, it may be used with benefit. Though Mr Wilkinson confesses he has never succeeded in restoring the patient to his original sensibility, he has, in many instances, considerably assisted the powers of motion. And, in very distressing cases, considerable relief has been obtained.

* An individual, aged 67, residing in London Street, and well

known to many artists as an eminent clay figure-maker, had laboured under a paralytic attack nearly 18 months. All the usual remedies, as well as electricity, had been tried in vain, inasmuch that, at the above period, he was so totally deprived of motion, that he could not rise from his chair without assistance.

‘He was brought to my house in a coach. For the space of about a quarter of an hour I transmitted the power of about twelve plates through the forehead and the back of the neck. This mode of application was continued for three or four days; and the fluid made to pass afterwards from the forehead through the affected arm. In less than a fortnight he had recovered the faculty of motion to such a degree as to be enabled to walk from his own house to mine, a distance of at least half a mile. In this state he remained in a manner stationary, and although the Galvanism was still continued for a month or six weeks, still no preceptible change was observed to take place.

2. In cases of deafness. Where this proceeds from defective energy of the auditory nerve, or from a relaxation of the membrana tympani, Galvanism has had good effects. In all other cases it can do no good.

3. In amaurosis and weakness of sight, Mr Wilkinson observes, that he cannot speak so favourably as in cases of deafness. He has tried it both in incipient amaurosis, and in the completely formed gutta serena, without any benefit whatever.

4. In spasmodic affections, and in cases where there is a defect of motion or want of action, Mr Wilkinson has been more successful.

‘In involuntary actions of the muscles, I know of no remedy so efficacious as Galvanism. In a contracted state of the fingers or hands, however clenched, on the application of this principle for the space of a few minutes, it rarely fails to induce a relaxation. In cases of cramp, if of long continuance, and even tetanus or locked jaw, it has afforded relief in a short space of time. In contractions of the joints, and in all cases of rigidity, it will be found a very advantageous stimulus, which will greatly contribute to the restoration of motion.’

In lameness from gout, it has been attended with the happiest effects. Mr Wilkinson has also found it extremely useful in the discussion of indolent tumours and scrofulous swellings.

5. In cases of mental derangement, two instances of the good effects of Galvanism have been adduced by Aldini; but, in these diseases, Mr Wilkinson himself does not appear to have had any experience.

In some distressing female complaints, nervous headaches and
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the like, he has derived, however, great advantage from the employment of Galvanism.

6. In suspended animation, the effects of Galvanism deserve to be tried, but in these cases experience seems still wanting.

VIII.

A Clinical History of Diseases, Part First, being, 1. A Clinical History of the Acute Rheumatism. 2. A Clinical History of the Nodosity of the Joints; read to the Literary and Philosophical Society of Bath.
By JOHN HAYGARTH, M. D. F. R. S. London & Edinburgh.
168 pages 8vo. London. 1805.

THE real school for the practical physician is the bedside of the patient. It is there that many men deficient in scientific knowledge acquire at last, and sometimes with justice, the reputation of being good practitioners. It is there that all must correct the information derived from study. It is there that we must ascertain the value of speculative opinions. Indeed, it is there only that useful theories can be formed by legitimate induction from facts. Unfortunately, however, for the advancement of medical science, much of the valuable knowledge thus obtained cannot be communicated to others, and by far the greatest number of those who possess extensive opportunities for observation either neglect them entirely, or do not condescend to disseminate the information they have derived from them beyond the immediate circle of their friends. In every large town there are professional men in extensive practice, who hurry from patient to patient, who write an old prescription because it is familiar to them, or a new one because it is fashionable, receive their fees, and think no more of their patient or his disease. That the public should suppose such men possessed of much experience is a natural mistake, but it is our duty to controvert the absurd idea, too prevalent among professional men themselves, that it is necessary to see very many patients to become an experienced practitioner, or that, in walking the wards of a crowded hospital, much practice is to be seen. On the contrary, a limited practice is most favourable for reflection and professional improvement. A multitude of patients only serves to distract the student, and to confound him, and the remarkable cases, which he may never again meet with, attract his whole attention, and lead him to neglect those common diseases which, in future, it will be his chief employment

employment to cure. But, even with the most favourable opportunities, the acquisition of personal experience is tedious, troublesome, and difficult. It occupies the best part of our lives. We must immediately record whatever we observe; and when we have obtained a sufficient number of observations, it is necessary to arrange them, and lastly to generalize the facts, uninfluenced by hypothetical opinions. How much then must we consider ourselves indebted to those public-spirited individuals, who add to all these labours the trouble of reducing them to a state intelligible to others, and of attempting to bequeath to their successors the fruits of their experience! With the feelings of gratitude suggested by these considerations, we now proceed to give some account of the volume before us.

Dr Haygarth has long been in the habit of recording, in the patient's chamber, a full and accurate account of every important symptom, the remedies which were employed, and, when an opportunity offered, the effects which they produced. In this manner he has noted and classed the cases of 10,549 patients, among the higher and middle ranks of society, from 1767 to 1801 inclusive, and from these records he has selected acute rheumatism and the nodosity of the joints as the first subjects of publication; the latter, because it has not hitherto been particularly described, and the former, for the purpose of recommending the Peruvian bark in preference to all other remedies.

'The term Rheumatism, both in common and medical language, includes a great variety of disorders, which ought to be distinguished from each other by different names. After separating from it the nodosity of the joints, tic douloureux, sciatica, lumbago, and other diseases, which nosologists have placed under this denomination, there still remain 470 cases of rheumatism. This disease is generally classed with fevers, and yet only 170 (about one-third of them) had any fever. These last are the cases which come under the title of acute rheumatism, and exclusively form the subject of the following pages.'

After describing the rheumatic fever, and explaining his tabular view of these 170 cases, he proceeds to the inferences which may be drawn from them. As these contain the result of his whole experience, we shall state them in as few words as possible. More males were attacked with acute rheumatism than females, in the proportion of nearly four to three. It affects all ages from below five to above 60, more commonly from five to 30, but most frequently from 15 to 20. No part of the year is exempt from this malady, but the colder season is more liable than the warm, nearly as seven to five. The principal cause is exposure to cold and moisture. With regard to the *latent period* or time which elapsed between exposure to the cause and appearance of the

the disease, out of 21 cases only four exceeded the period of 48 hours. The shortest time noted is half an hour; but Dr Haygarth believes that the cause and effect are sometimes connected together without any interval of perfect health. Persons who have been previously affected with acute or chronic rheumatism, gout, or sore throat, are most liable to this disease. The concomitant diseases, which occurred most frequently, were delirium in 16 cases, miliary eruptions in 10, catarrh in eight, syncope five, quotidian four, diarrhoea four, and gout three. Out of 170 cases, one or more joints were affected in 154; both joints and muscles in 33; and in 9, muscles only. In 80 cases both pain and swelling are described, in 17 pain only, and in four swelling only; in nine only is redness described. By these omissions Dr Haygarth does not imply that these symptoms were not present in other cases, and indeed in two only is it mentioned that there was no swelling. In the same manner, both chills and sweats are noted only in 52 cases, chills alone in 11, and sweats alone in 33; but two cases only are noted where there was no chill, five where there was no sweat, and six where there was no fever. The appearance of the urine is noted in 30 cases only; in 26 its sediment was red, in three there was no sediment, and in one black from the presence of blood. Dr Haygarth here suggests the importance of discovering chemical tests, by which gouty urine might be distinguished from rheumatic. Out of 93 cases, only five had a pulse below 72; in 47 the number was from 84 to 107, and in 29 it was from 108 to 130. In 31 cases, the blood drawn had an inflammatory crust, in three scarcely any, and in one none at all. Two cases attended with vomiting are noted, and one where the rheumatism was translated to the stomach. The rarity of such a connexion, in Dr Haygarth's opinion, confirms rather than refutes Dr Cullen's opinion, that the stomach was not affected by rheumatism, but only by gout.

These are valuable facts with regard to the history of this painful disease; but we must express our regret that he has withheld from us the information which we should have derived from the addition of a column to his table N^o I. expressive of the time which elapsed between his first visit and the termination of the disease. The objections to its insertion, arising from want of room, might have been removed by marking the ages of patients of both sexes in one, instead of distinct columns.

As professional men, we feel a pleasure in quoting Dr Haygarth's account of the manner in which he first became acquainted with the use of cinchona in rheumatism.

It was before intimated that the chief purpose of this clinical history of the acute rheumatism is to explain why, in what manner,

and with what effect, I have employed the Peruvian bark, or cinchona, as a remedy for this fever.

‘ For several years after the period when I commenced the practice of physic at Chester, that excellent physician, the late Dr John Fothergill, used annually to retire from the fatigues of his profession, during about two months in summer, to Lea-Hall in Cheshire. In this pleasing rural retreat, I had frequently opportunities to enjoy his very improving and entertaining conversation. He allowed me the very important privilege of stating to him the doubts and difficulties which often perplexed me as a young physician. With a truly liberal and enlightened mind, he freely and generously communicated to me his opinion and advice, whenever he was thus consulted.

‘ In one of these friendly visits I solicited his counsel for a patient ill of a rheumatic fever. He recommended that the Peruvian bark should be administered. At this advice I expressed great surprise; that it was directly contrary to the mode of treatment which I had been taught by the most judicious and learned authors and professors; and that I had always understood the bark to be highly improper in all inflammatory disorders.

‘ To my objections he replied, that ‘ when I was a young physician, ‘ being twice called out of my bed to visit patients in a frosty night, ‘ I caught a very severe rheumatic fever. By the advice of my medical brethren I had been bled repeatedly and largely, even to 70 ‘ ounces. My disease yet remained unsubdued, and my blood still ‘ exhibited an inflammatory crust. Hence I was convinced that the ‘ method of curing this fever by such copious evacuations was erroneous. Soon after my recovery, I was desired to visit a patient ill of ‘ an acute rheumatism. At my request, Sir Edward Hulse, at that ‘ time the most eminent physician in London, was consulted. He proposed that we should order the Peruvian bark. I gladly agreed to the ‘ proposal, as I thought there were several analogies between an ague ‘ and a rheumatic fever. In both diseases, the urine lets fall a similar ‘ lateritious sediment. In intermittent as well as rheumatic fevers, ‘ the blood, when let, is covered with an inflammatory crust. The pain ‘ and fever of rheumatism have certain periodical, though not quite ‘ regular, paroxysms and intermissions.

‘ In this consultation with Sir Edward Hulse, the bark was given ‘ with such manifest advantage, that I have ever since adopted the ‘ practice in this disease, and recommend it to you, in spite of all medical authorities to the contrary.’

He then gives a short history of the progress of the practice of giving cinchona in acute rheumatism by Morton, Hulse, and Fothergill. Thirty-five years have elapsed since he himself first prescribed it, at first with great caution, but taught by attentive observation and successful experience, with more and more freedom, and with more manifest proofs of its safety and efficacy. If the cases be arranged in the order in which they occurred,

occurred, by simply inspecting the table, we see that it daily became a greater favourite. Of 170 cases, it was exhibited in 121; and, in the last half of his practice, in no fewer than 76 of 85. In these 170 cases, twelve terminated fatally, either by a translocation of the inflammation to the brain, lungs, stomach, or some other vital part, or as being found in combination with other diseases. But only four of these twelve had taken the bark; so that, in Dr Haygarth's practice, one in six of those who did not take cinchona died, and only one in 30 of those who did. From the history of these fatal cases, it is evident that the bark did not aggravate a single symptom. Indeed, in four examples only did it fail to produce manifest salutary effects on its first exhibition; and, even in three of these, it was of service, after proper evacuations by the lancet, leeches, and antimony. All these untoward cases are candidly detailed, while only two of the examples of its successful exhibition are given, but the general success of his practice is thus strongly stated:

'To sum up the whole in a few words. After the stomach and bowels have been sufficiently cleansed by antimony, I have, for many years, begun to order the powder of the Peruvian bark in doses of gr. v. x. or xv. every two, three, or four hours; and if this quantity had a salutary effect, it was gradually increased to gr. xx. xxx. or xl. with sedulous attention never to add more than what perfectly agrees. It has generally been taken in milk, mint water, or the decoction of bark.

'With the exception of the few cases above noticed, the bark has uniformly produced the most salutary effects. The pains, swellings, sweats, and other symptoms of inflammatory fever manifestly and speedily abate, and gradually cease, till health is perfectly restored.

'Dr James Currie, in his Medical Reports, p. 421. observes that 'the inflammatory rheumatism is one of the most tedious and intractable of diseases.' This remark of a physician of such extensive experience and medical knowledge deserves particular attention. It proves the value of an inquiry which attempts to discover a safe and certain remedy for such a malady.

'Another circumstance merits great attention. When the rheumatic fever has been treated by bleeding, leeches, sudorifics, &c. it is well known that pains of the diseased joints and muscles often afflict the patient for many months, or even years. In my clinical reports I find no instance of this kind, and have reason to think that the bark entirely prevents this cause of the chronic rheumatism as a consequence of the inflammatory fever.

'Except mercury in the syphilis, there are few or perhaps no examples where a remedy can produce such speedy relief and perfect recovery in so formidable a disease. For many years I have been thoroughly convinced that the Peruvian bark has a much more

powerful effect in the rheumatic than any other fever; and that it does not even cure an ague so certainly and so quickly.

The second part of this volume is dedicated to a clinical history of the Nodosity of the Joints, an affection which has hitherto passed under the name of gout or rheumatism, but which, in order to render it a more direct object of medical attention, Dr Haygarth thinks, ought to be considered as a distinct genus.

‘ In this disease the ends of the bones, the periosteum, capsules or ligaments, which form the joint, gradually increase. These nodes are not separate tumours, but feel as if they were an enlargement of the bones themselves. This point might be anatomically ascertained without any difficulty or doubt.

‘ These diseased joints generally suffer pain, especially at night, but in a less degree than might be expected from such a considerable morbid change. They often feel sore to the touch. In one case the patient was attacked with severe spasmodic pains. As the disease increases, the joint becomes distorted, and perhaps, in bad inveterate cases, even dislocated; its motion becomes gradually more injured. In a few patients a crackling noise was perceived in the joint; when in motion, particularly in the neck. The skin seldom or never appears inflamed.

‘ There is one distressful circumstance which distinguishes this disease. It has no intermission, and but slight remissions. For, during the remainder of the patient's life, the nodes gradually enlarge, impeding more and more the motion of the limb. The malady spreads to other joints, without leaving or producing even any alleviation in those which had been previously attacked.’

Dr Haygarth met with this affection in 34 out of 10,549 patients, 33 of whom were women; and of these 33 it affected only three during the period of regular menstruation. It affected principally the fingers, hands, and wrists; and the most common date of its commencement was when the patients were between 50 and 60 years of age.

‘ The nodes appear most nearly to resemble gout. Both of them are attended with pain and swelling of the joints; but they differ essentially in many distinguishable circumstances. 1. In the gout, the skin and other integuments are generally inflamed with pain, which is often acute, soreness to the touch, redness and swelling of the soft parts, but in no respect like the hardness of bone. 2. The gout attacks the patient in paroxysms of a few days, weeks, or months, and has complete intermissions at first for years, but afterwards for shorter periods. 3. The gout attacks men much more frequently than women.

‘ These nodes are clearly distinguishable from acute rheumatism, because they are not attended with fever. The tumour of the joints is much harder, more durable, and less painful, in the former than the latter

latter disease. The nodes are totally different from chronic rheumatism, because the latter chiefly affects the muscles, and is seldom attended with any swelling of the affected parts.

In two or three cases, the nodosity appeared to alternate with a colic of the stomach, *gastralgia*, and in one instance with an *asthma*. If these few examples of the translation of the disease to and from the viscera be confirmed by future observations, they would prove that the nodes were in their nature more allied to gout than rheumatism.

They bear a nearer analogy to the former than the latter disease in another circumstance. They more commonly attack persons in the higher and middle, than in the lowest class of life. However, it is not exclusively a disease of any rank. I have seen it, though seldom, among the patients of the Chester Infirmary. But this remark is founded on general recollection, not an induction from facts, as I have not yet classed the cases of these patients under their proper genera; otherwise the comparative frequency of the disease might be accurately ascertained.

I do not recollect that, in cases of nodes, any notice is taken of that pink-coloured sediment in the urine which appears in gout, or in acute rheumatism.

Of the various remedies employed, Dr Haygarth informs us, that, as far as his experience extends, 'most benefit was derived from the warm bath and a stream of warm water, with repeated application of leeches on the diseased joints.'

We have transcribed the greatest part of Dr Haygarth's description of this insidious disease, with the view of assisting him in exciting the exertion of medical men, to prevent, if possible, so distressful a malady at its commencement. It has fallen more than once under our own observation, but we always considered the nodosities as a consequence of rheumatism, and the malady as incurable, so far at least as the altered shape of the bones was concerned. From this neglect, we are at present unable to make, with confidence, any observations on, or additions to Dr Haygarth's history of this disease; but we believe that, in a slight degree, it is much more frequent than he has stated it to be, at least we remember an excellent anatomist of this city having pointed out to us in his collection a variety of bones, particularly tibias and fibulas, of which the extremities seemed as if they had been enlarged, softened, and yielded to pressure, and which he had picked up in his dissecting-room in the course of a few months, after one remarkable example had attracted his attention to the circumstance.

IX.

Answers to all the Objections hitherto made against the Cow-pox.

By JOSEPH ADAMS, M. D. Physician to the Small-pox Hospitals, and Author of Observations on Morbid Poisons. 8vo. 1s or 26 for L. 1. 1s. Published by Johnson for the benefit of the Hospital.

THE objections against vaccination being much stronger among the public than the faculty, this pamphlet is written in a popular style, divested of all technical language. The arguments, however, are not less systematically arranged. The objections, the author conceives, may be reduced to three. 1st, That vaccination is no security against small-pox; 2^{dly}, That it is only a security for a time; 3^{dly}, That, with the cow-pox, other humours are introduced.

The great success that has attended vaccination has effectually subdued the first. The second stands on no analogical ground to support it, excepting such as may be applied to small-pox, whether in the inoculated or casual mode, as instances are produced in which the susceptibility to the disease has occurred after both.

As to the last, the author inquires—Are these humours derived from the person or the cow? If from the former, are we not exposed to the same under inoculation for the small-pox? If from the latter, how happens it that our English dairy-maids, universally celebrated for rude health, are those who are most liable to the disease, and in whom it was first discovered? It is further shown, that these cases of subsequent eruptions and abscesses are more common after inoculation for small-pox, and still more so after the disease in the casual way. Instances of this, on all these points, are given from authentic records published before cow-pox was practised.

On the whole, we trust this publication will prove the means of satisfying many an aching heart, which may at present be under apprehensions from having vaccinated its darling child.

X.

Pharmacopœia Collegii Regii Medicorum Edinburgensis. 12mo. Edinburgi. 1805.

THE period of a year scarcely elapsed after the publication of the ninth edition of the Edinburgh Pharmacopœia, until the impression was exhausted. In it the first attempt was made to effect

effect a complete reform of language of materia medica pharmacy on general scientific principles. Indeed, it was formerly so barbarous and heterogeneous, that the editors of every modern pharmacopœia have endeavoured to improve it. But differing in their ideas of the extent to which it should be carried, and being guided by their own peculiar opinions, without any general principle, as many pharmaceutic dialects have been produced as there have been pharmacopœias published. The evils resulting from this variety of nomenclatures, and from this constant fluctuation of names, imperiously demanded a reform on general principles, which, if universally acknowledged, would render the language of materia medica and pharmacy uniform, steady, and universal. This was the object which the Edinburgh College hoped to attain by adopting, in their fullest extent, the improved languages of the sciences of natural history and chemistry, of which, in fact, materia medica and pharmacy are but branches. To this attempt many objections have been made, both by those who understood and those who did not understand the subject. The latter only served to expose the ignorance of their authors, while the former have a direct tendency to accelerate the universal adoption of the reform they were intended to oppose. That a first attempt should be perfectly successful was not to be expected; but until the general principles, that the names of compound medicines should express, as correctly as possible, the nature of their composition, and that the names of simples should be the same with those already appropriated to the same substances in natural history and chemistry, be refuted, well-founded objections to particular titles will only lead to the introduction of better. Thus, since the first publication of the ninth edition of their Pharmacopœia, either the criticisms of others, or their own more mature reflections, have suggested so many alterations and real improvements, that the present is in fact a new edition, although they seem to wish that it shall only be considered as a new impression.

‘Pharmacopœiam nostram nuper editam, cum iterum prelo subicere voluerunt bibliopolæ, eam quâ potuerimus curâ denuo retractavimus, et mendas quasdam, quæ forte irrepsérunt, lubentes correximus.’

Of these alterations we shall endeavour, both for the sake of the purchasers of the former impression, and to mark the progress of the science, to give some account. To the list of the materia medica they have added folia asari Europæi, formerly omitted by mistake, carbo ligni and sulphas barytæ; on the contrary, they have rejected from it the herba anthemidis nobilis, the folia, flores, aqua stillatia, et oleum volatile florum, et fructus

fructus immaturus citri Aurantii, mel, and oleum fixum myrticæ moscatæ vulgo oleum macis. They have, on many occasions, improved the arrangement of the synonymes and the form of printing this list. In conformity with their general principle, they have referred amyllum to triticum, from which it is always obtained; but they contented themselves with indicating the callicocca ipecacuanha, as the plant furnishing the officinal ipecacuan, the gareinia cambogia and stalagmitis cambogiodis, as affording gamboge, and the eucalyptus resinifera, as the tree from which kino is at present obtained, a substance which is no longer erroneously called a gum-resin. They have very properly marked the distinction between the proper solid resins, and resinous fluid juices, which are probably a compound of resin and volatile oil, such as the amyris gileadensis, coparifera officinalis, and the genus pinus, yield, by denominating the latter resinæ liquidæ. The view of the products of the last genus is the neatest and most instructive we have ever seen; to prevent repetition, however, under each species, they have introduced, in its alphabetical place, the resina pini, which they describe to be resina ex variis pinis, oleo volatile privata, and as synonymous with the resina alba of their former editions. They have corrected the error they have, in common with other colleges, hitherto committed, in describing spermaceti as the sebum physeteris macrocephali, and have cautiously said, that it is '*materia in cranio reperta*,' although we think they might have adopted Fourcroy's generic name for similar substances, *adipocera*. They have also properly corrected *gummi-resina* guiaci officinalis into *resina*, and they have introduced carbonas plumbi as a synonyme of oxidum plumbi album, as it is commonly carbonated.

The improvements of the second part are equally great. They have diminished the numbers of that miscellaneous collection of preparations called medicamentorum quorundam simplicium præparationes, by referring most of them to their proper places. They have made a separate chapter of the *Mucilagines*, and have placed among the calcareous preparations the aqua calcis and potio cretacea, all of which were formerly improperly classed with the infusa. The oleum lini cum calce is now entitled linimentum aquæ calcis, and placed among the liniments. In the former edition, the aromatic cloves were in one place described as the fructus, in another as the pericarpium immaturum, and in the materia medica as the floris germèn caryophylli aromatici, which last designation is now uniformly adopted. We may here, however, mention that this is the only instance in which the College have deviated from Willdenow's edition of Linnæus, in which this tree is referred to the genus *Eugenia* with the trivial name

name caryophyllata. In the preceding edition, the oleum terebinthinæ purissimum was ordered to be prepared from oleum terebinthinæ, although the latter title was not to be found in the list of materia medica. Oleum pini volatile is now uniformly employed. The great length of the titles of compound medicines having been complained of, the College have endeavoured to abbreviate them, but according to fixed principles. They have considered it as unnecessary to introduce into the title the part of the plant used, unless to distinguish two different substances, as unguentum pulveris et unguentum infusi meloës vesicatorii. When there are two active ingredients, the names of both are introduced into the title, as pulvis ipecacuanhæ et opii; where more than two, or the second ingredient is less important, the title consists of the name of the most active, with the adjective *compositus*, as, spiritus lavandulæ *compositus*, pulvis jalapæ *compositus*. When only one substance is mentioned in the title, both its specific and generic name are introduced, as extractum cassiæ sennæ; when two, or where *compositus* is added, either the generic or specific names are omitted, that which is most characteristic only being retained, as infusum tamarindi cum senna, infusum gentianæ compositum. In many instances they have changed the copulative *cum* with advantage for *et*, but not uniformly. *Et* should always be used when both substances undergo the same preparation, *cum* only when the latter substance is added to a preparation of the former. Thus infusum tamarindi cum senna suggests the idea that senna in substance is added to an infusion of tamarinds, whereas it is an infusion of tamarinds and of senna, *et senna*.

Throughout, the directions to the apothecary are rendered more full and precise, by mentioning whatever preliminary processes the ingredients must undergo, as, whether they are to be bruised, rasped, or powdered, and also whether the whole quantity is to be added at once or gradually. In the old formula for making mercurial ointment, the quicksilver is merely directed to be rubbed with the axunge and suet until it be killed, which would be almost impossible; whereas it is now more properly directed that the quicksilver should be killed with a little of the axunge. Some formulæ are still more materially improved. The unguentum nitratis hydrargyri, which was formerly prepared with axunge alone, and soon became hard and friable, is now made with nine parts of olive oil, and only three of axunge.

The following receipt for preparing the Benzoic acid is taken from the Prussian Pharmacopœia.

‘ ACIDUM BENZOICUM.

‘ *R.* Balsami Styracis Benzoin uncias viginti quatuor,
Carbonatis Sodæ uncias octo,
Aquæ libris sexdecim.

‘ BALSAMUM cum carbonate tritum, ex aqua decoque assidue agitando per horam dimidiam, et cola. Balsamum residuum ex aliis aquæ libris sex decoque et cola. Colaturam hanc cum priori misce et vapora donec superfint librarum duarum. Iterum cola et instilla, quamdiu fiat præcipitatio,

Acidum sulphuricum dilutum.

‘ ACIDUM Benzoicum præcipitatum in aqua bulliente solve. Liqueorem adhuc ferventem cola per linteum et sepone ut crystalli formentur. Crystallum collectas, aquâ frigidâ ablutas sicca et serva.’

ALTHOUGH, by this process, the acid has not the beautiful argentine appearance of that sometimes prepared by sublimation, it is obtained in much larger quantity, totally free from empyreumatic oil, and in fine powder, to which the other can scarcely, from its elasticity, be reduced.

As the carbonate of barytes is not always easily obtained, the following directions are given for preparing the muriate from the sulphate.

‘ Si carbonas barytæ haud obtineri potest, paratur murias ex sulphate barytæ modo sequente.

‘ *R.* Sulphatis barytæ libras duas,

Carbonis ligni in pulverem triti uncias quatuor.

‘ IGNE torreatur sulphas, quo facilius teratur in pulverem tenuissimum, cui bene admiscendus est pulvis carbonis ligni. Indatur materies crucibulo, et, adaptato operculo, urgeatur igne forti per horas sex. Materia bene trita immittatur aquæ bullientis libris sex in vase vitreo vel figulino, et agitatione permisceatur, aëris aditu, quantum fieri possit, occluso.

‘ Stet vas in balneo vaporis, donec subsederit pars non soluta; dein effundatur liquor. Illi affundantur denuo aquæ bullientis librarum quatuor; quæ post agitationem et subsidentiam priori liquori addantur. Liquori adhuc calido, vel si frigerit iterum calefacto, instilletur acidum muriaticum, quamdiu moverit effervescentiam. Dein coletur, et vaporet ut crystalli formentur.’

Mr Goettling has lately proposed, as an improvement of this process, the addition of muriate of soda. It acts as a flux, and renders a smaller proportion of charcoal necessary; one part of charcoal, and two of muriate of soda, being sufficient to decompose six of sulphate of barytes.

The processes for preparing aqua ammoniæ and alcohol ammoniatum are also greatly improved.

‘AQUA AMMONIÆ: olim, AQUA AMMONIÆ CAUSTICÆ.

℞. Muriatis ammoniæ libram unam,
Calcis recentis libram unam cum semisse,
Aquæ destillatæ libram unam,
Aquæ uncias novem.

‘In vase ferreo vel figulino calei contusæ affunde aquam, vas operito donec calx, in pollen dilapsa, frigerit; dein Muriatam in pulverem tenuissimum tritum, cum calce terendo in mortario permisce, et protinus retortæ ex vitro viliori (*bottle glass*) facit inde. Ponatur retorta in balneo arenæ et adaptatur, secundum artem, apparatus chemicus Domini Woulfe. Vasi primo, minus capaci, tubo conservatore instructo, immitte aquæ destillatæ uncias duas, vasi secundo, quod reliquum est aquæ destillatæ.

‘Tandem supponetur ignis, sensim augendus, donec fundus ollæ ferreæ rubescat, et quamdiu prodierit ammonia. Misceatur liquor utriusque vasis, et in phiolis parvis bene obturatis servetur.

‘ALCOHOL AMMONIATUM: olim, SPIRITUS AMMONIÆ.

℞. Alcoholis uncias triginta duas,
Calcis recentis uncias duodecim,
Muriatis ammoniæ uncias octo,
Aquæ uncias octo.

‘Ex hisce paratur alcohol ammoniatum omnino sicut aqua ammoniæ, et simili servetur modo.’

The improvement in the former consists in the manipulation, but, in the latter, in the very nature of the product; for, in the former receipt, which had been inadvertently borrowed from the London College, instead of getting the whole of the ammonia combined with the whole of the alcohol, the greater part of the ammonia came over in the state of carbonate, and was therefore insoluble in the alcohol; while the fluid part of the product was incapable of dissolving volatile oils, and therefore unfit for the preparations in which it was to be used.

XI.

Pharmacopœia Nosocomii Regii Edinburgensis. 12mo. Edinburgi. 1804.

In every hospital there are certain extemporaneous formulæ in daily use, and which the physician is in the habit of prescribing by their titles, to save himself the unnecessary trouble of repeating in detail the directions to the apothecary, each time he wishes them to be exhibited. By collecting these formulæ, each hospital acquires its peculiar pharmacopœia, and it is of great importance to the pupils, wherever they are numerous, that it should be published. This has accordingly been long the custom in Edinburgh, and the present is the seventh edition of its Hospital Pharmacopœia, which is completely remodelled according to the new general Pharmacopœia, to which it forms a very useful appendix, by containing a collection of excellent extemporaneous formulæ written in the new nomenclature, and a copious posological table.

XII.

Tables of the Materia Medica, or a Systematic Arrangement of all the Articles admitted by the Colleges of London, Edinburgh, and Dublin; exhibiting a concise View of the most material Circumstances respecting them; together with a number of original and selected Formula; to which is subjoined a Table of all the secondary Salts employed in Medicine. By JEREMIAH KIRBY, M. D. Member of the Royal Medical Society of Edinburgh. 12mo. Edinburgh. 1805.

THE little volume now before us, we are informed, was originally intended to make part of a larger work on extemporaneous prescription. In it the articles of the materia medica are arranged into classes, according to their effects on the human body. Of each article are given the systematic name; the synonymous pharmaceutical names; the country in which it is produced or from which it is brought; the part employed in medicine; the form in which it is commonly administered; the usual doses of the simple; the several officinal preparations which belong to the class; the usual doses of these; and the cases

cases to which the article or its preparations are more peculiarly suited. The doses are for the most part expressed under two extremes, between which lies the usual dose for an adult, by which the dose for any age may be adjusted according to a table given.

To each class is subjoined a number of select formulæ, both to serve as illustrations of the mode of prescribing and administering the several articles, and to afford to the young practitioner, who is yet inexperienced in the art of prescribing, examples of useful remedies.

The table of secondary salts contains much useful chemical information condensed into a very small space. The language of the Edinburgh Pharmacopœia is very generally adopted in this work, and our author, approving of their reform, has been induced to become a reformer himself. Instead of the symbols usually employed in prescribing for ounce, &c. he has used the contracted word *unc.* &c. ; he has also substituted the Arabic for the Roman numerals, and has written his directions in English. For these innovations the following reasons are given.

The characters 3 and 3̄ are so similar, that they may easily be written for each other, and that they have been so written cannot be denied. The consequence is obvious ; a stroke of the pen too much may kill the patient, and a stroke too little may produce a medicine of little or no efficacy. Strange ! that physicians should have been so misled by an affectation of mystery or concealment, (for to what else can be attributed the use of these hieroglyphics ?) as to place the safety of their patients at the mercy of a *lapsus penna* ! *Unc.* and *dr.* can never be written for each other, and we see no good reason why these abbreviations should not be employed for *uncia* and *drachma*, as well as *gr.* and *gt.* for *gratum* and *gutta*. Dr Spens, in his elegant edition of the *Pharmacopœia Nosocomii Edinburgensis*, has employed these contracted words, but has retained the Roman numerals. The use of the Arabian figures appears calculated to ensure both perspicuity and dispatch. They are more easily written, occupy less room in a prescription, and remove all possibility of mistake. As to the directions, they should always be written in the vernacular language. In a prescription, perspicuity is our first object ; it is not here that we are called upon to display our learning and classical elegance ; and whoever considers that these are properties not always to be met with in the shop of an apothecary or druggist, will readily waive them in order to ensure the perfect understanding of his prescriptions.

This little work may also be considered as an useful appendage to the Edinburgh Pharmacopœia, having the same relation to private practice that the hospital pharmacopœia has to hospital practice. As they are of the same size, they may be conveniently bound together, and will form an useful pocket volume for young practitioners.

PART III.

MEDICAL INTELLIGENCE.

Board of Health.

IN our last Number we announced the establishment of a Board of Health. They have already published two reports on the subject of contagion, and the best means of counteracting its influence. These reports, with some other regulations connected with the performance of quarantine, have been transmitted to the Lord Lieutenants of the maritime counties by Lord Hawkesbury, with orders that they should be inserted in the county newspapers, with the view of giving to them the greatest possible publicity. It therefore becomes our duty not only to promote, as far as the circulation of our Journal enables us, the views of his Majesty's Privy Council, but also to record, and to render of easy access to medical men in general, memoirs so intimately connected with the purposes for which this Journal was undertaken, and coming from such high authority.

In obedience to the commands of his Majesty's most Honourable Privy Council, we proceed to the consideration of the third head of their Lordships' instructions, and to the detail of the measures which it would be proper to adopt, in case the plague, or other infectious disease, attended with great mortality, should pass the barrier of the quarantine, and actually appear amongst us.

It is so long since the plague has visited this country, that it is in some degree necessary to recal the mind to the miseries inflicted upon a nation by that greatest of all calamities to which the human race is subject, in order that we may hold ourselves the more ready to comply with the regulations and orders which the exigencies of such a time would call for. Unquestionably the misery produced by a wide-spreading pestilence far exceeds all others, and considering the size of our towns, and the population of them, particularly of the metropolis, there is hardly any nation would have so much to dread from that calamity as this kingdom. The destruction of thousands of individuals, the interruption of trade, the check to manufactures and commerce, and the consequent diminution of the public revenue, are
some

some of the certain evils attendant upon pestilence; the regulations, therefore, and orders necessary to check its progress, or to extinguish it at its first appearance, however strict they may be, cannot be deemed harsh or severe, when the magnitude of the object for which they are framed is considered. Nor indeed is there any reason to fear that the good sense of the nation would not readily acquiesce in measures, the utility and advantages as well as the necessity of which would be obvious.

It should be observed, that the following regulations are founded chiefly on experience in what has been called the plague, by way of pre-eminence, or the plague of the Levant. But as no disease can be said to equal, still less to exceed this in its infectious and fatal nature, it is not unreasonable to presume, that the precautions which have been found sufficient to guard against that would likewise be effectual against the sickness which lately prevailed at Gibraltar, or any other contagious and mortal distemper.

The experience of many centuries has shown, that the plague is spread by near approach to or actual contact with the person of the sick, and by clothes and apparel, which having imbibed the poison, are capable of retaining it. Hence it is only necessary to keep at a certain distance from those ill of the disease, and from such things as have been exposed to it, in order to avoid the contagion. This is the great principle we are all along to keep in view. All the regulations of quarantine rest upon this foundation. The separation of the sick from those that are well furnishes the only means which promise any reasonable security against the spreading of such calamities.

Of the success of these precautions we have many signal instances. Since the fatal year of 1720 at Marseilles, several persons, at different periods, have been afflicted with the plague in the lazaretto of that port; yet, by a careful prevention of intercourse, it has not spread. Also persons under the same roof, in different apartments, when all communication has been cut off, have not suffered. The practice in the factories at Aleppo, and elsewhere, of "shutting up," as it is termed, affords a well-known example of the same kind, where the merchant continues in perfect security in the midst of a surrounding pestilence, whilst the inhabitants of contiguous houses, not cut off from intercourse with the common people, become victims of the disease. In the year 1771 the plague raged at Moscow, and in the month of September destroyed in that city 27,000 persons, while the nobility and opulent gentry, who confined themselves to their palaces or houses, suffered very little. And Mertens, who was a physician on the spot, informs us, that it broke out seven different times in the orphan charity there, containing 1400 persons, and was as often suppressed by means of a careful separation. Likewise of the pestilential disorder lately so fatal at Malaga, we are informed that the inhabitants of Medina-Sidonia remained uninfected so long as the governor kept the gates shut, but, upon intercourse being permitted,

mitted, the disease presently attacked them ; yet then, by a vigilant and judicious police, it was confined to one quarter of the town, and did not extend its ravages further. The plague appeared in our army during the late glorious campaign in Egypt several times ; but from the good care that was immediately taken to separate the sick from the sound, and to prevent such intercourse as is allowed by the Turks, the mischief it occasioned was comparatively small, and the disorder was soon suppressed.

These and other similar facts point out, in a very convincing manner, the advantage to be derived from careful separation, and the necessity of a strict observance of the regulations to be laid down for this purpose.

In consulting the experience of former times, we have found, with pleasure, that the practice of our ancestors, as far back as the time of Queen Elizabeth, furnishes many wholesome regulations, which might easily be adapted to the present times. These we have thought the more deserving of attention, not only because they bear the stamp and seal of experience, but because their execution does not appear to have any thing in it inconsistent with the laws and constitution of the kingdom, as the legal authority of the magistrate is the only power resorted to. But though we commend the spirit in which the regulations were executed, some of the regulations themselves seem highly injudicious, as particularly where they direct the sick and the well to be shut up together, in the infected houses. This proceeding was, in its consequences, no less injurious to the public than cruel to individuals ; for the dread of being shut up made every one about the sick conceal the disease as long as possible ; and when that could no longer be done, and the magistrate had set his mark upon the house, the horror of their situation drove them to despair, and made them clandestinely, or even by force, break through their confinement, and spread wide the infection.

In the following regulations, we have had respect to the practice both of our own country and of foreign countries in times of sickness, and have endeavoured, as far as the nature of the subject would admit, to consult the security of the public, and the comfort of individuals. But the principle of separation being acknowledged, the mode to be adopted may admit of considerable variation from many local circumstances.

Some variation of practice will likewise be necessary in different degrees of the calamity ; for such measures as seem best calculated to extinguish it in its beginning would become impracticable, when the mischief had spread over a larger district ; let us therefore early exert ourselves with promptitude and vigour, before it has acquired strength with its growth, and become too powerful to be resisted.

As soon as any one is reported to be infected, notice must immediately be given to the magistrate, who shall employ some physician to examine into the fact ; and, upon receiving the confirmation of his

his report, the magistrate shall, without delay, remove the rest of the inhabitants from the sick house to some place of observation. It may be left to the option of the parties either to provide for themselves, at their own expense, a house for this purpose, such as the magistrate shall approve of, or go to one procured by the magistrate at the public charge. They shall be considered as suspected, and shall be examined twice every day by some physician, in order that any one of them who sickens may immediately be removed; the others shall be prohibited from all intercourse for the space of 20 days. A physician ought to be sent immediately by the Lords of his Majesty's most Honourable Privy Council, or by the Board of Health under their direction, for the exclusive purpose of attending the sick, and also for examining the suspected.

The suspected being removed, the sick person shall continue to reside in the house where he was taken ill, and shall not be permitted to quit it till 20 days from the date of his perfect recovery, or longer, in case any open sore, or other circumstance, render the security doubtful. He must then be required two several times to go into a warm bath, or to have his body as often thoroughly washed all over with warm water; he must afterwards put on clothes which are either new, or have been effectually purified, according to such process as shall hereafter be directed.

The sick person shall be allowed to have any one of his friends or family he chooses, and who may be willing to attend him, as his nurse. If there is nobody he or his friends appoint for this purpose, the magistrate shall provide one. In any case, the attendant must, upon no account, leave the house till the sick be either recovered or dead; and shall then perform a quarantine of 20 days, and submit to the regulations prescribed for the purpose of purification.

Those who are removed from the sick house shall give to the magistrate a correct list of all the articles they take with them, which shall be subjected to the same process as is used at the lazarettos in regard to similar articles received from suspected ships. No articles should be removed without an express licence from the magistrate. It might be advisable to provide cheap clothing, at the public expense, for the use of such poor persons as have not a sufficient change of the common articles of dress.

It will be necessary that one or more watchmen or guards be placed constantly at the door of the infected house, and also at the house of observation, to prevent all ingress or egress, either casual or designed.

Messengers should also be provided, whose business it shall be to procure such things as are wanted in the sick house, or house of observation. These things shall be conveyed through a window by a plank or a basket. In the case of poor people, all necessaries must be furnished by the magistrates at the expense of the county, or neighbouring counties, which, from their proximity, become more immediately interested in checking and extinguishing the disease.

If the infected person be in a situation to admit of insulating the part of the house in which he resides, it may not be necessary to remove the other parts of the family, provided they will submit to be shut up in the same house, entirely separated from the sick, and cut off from all communication with the rest of the town, to the satisfaction of the magistrates. In this, as in the former case, every individual of the family must perform a quarantine of 20 days from the time of the cessation of the disorder.

The economy and management of the sick house should be as follows: The person ill of the plague, or other contagious fever, should be laid in a bed without curtains, in the largest and most airy apartment, and the bed should be placed in the middle of the room; a part of the window and door should be constantly kept open to promote a current of air in the room, taking care, however, that it do not annoy the sick. If it be cold, there should be a fire in the room, which would promote the circulation of air in the apartment. The utmost attention should be paid to cleanliness, both in the persons of the sick, and in the clothes that are about them, which ought to be frequently changed. By these means the accumulation of the poison will be prevented in such things as are about the sick; and, by means of ventilation, the concentration of the poison will be guarded against in the air of the apartment; both which circumstances will materially contribute to the safety of the nurse and all others about the sick.

The importance of these precautions will appear, if we keep in mind the well-established fact, that the poison, by being diffused in the air, soon becomes innoxious; and that, at a very small distance from the persons of the sick, it ceases to do mischief. It can scarcely, therefore, be doubted, that the less it is allowed to concentrate in the air of the apartment, or to collect in the apparel or bed-clothes, the less danger will there be of the spreading of the disease, and the greater chance of its speedy extinction.

The physician, surgeon, apothecary, or nurse, who attends any person ill of the disease, should be enjoined to remain about the sick as short a time as is consistent with their duty; and to avoid as much as possible all contact with his person, or with his bedding, clothes, &c. Gloves of oiled silk, an oiled silk dress, and other similar precautions, may be useful with this view. These might easily be washed or wiped with a wet sponge, which should be allowed to remain in water. The glass or cup, out of which the sick have taken any thing, should be immediately put in cold water. Any fragments of bread or other food they may have handled should be treated in the same manner. Their excrementitious discharges should also all be received in cold water, and quickly moved out of the sick apartment.

The linen about the persons or beds of the sick, when changed, should be put in cold water, in which they should lie till it can be put on the fire and boiled; and every other part of clothing of a suspicious

picious nature might be treated in the same manner. The washing of such things should be all performed by washing machines.

These precautions may appear minute, but we beg it may be recollected, that though we know most certainly that the poison proceeds from the person of the sick, yet we do not know that it is confined to any one discharge more than another, and therefore must guard as much as possible against them all. The perspiration, both sensible and insensible, the breath, the vapour hanging about the bed-clothes, the excrementitious matter discharged from the mouth, the nose, the bowels, and the bladder, also the matter from the sores, are all probably capable of conveying the poison, and ought therefore all to be carefully avoided.

If the sick die, the body should be wrapped in oiled cloth, or tarred cloth, and soon buried.

It must be remembered, that every thing that tends to secure those about the sick from infection is of the greatest importance, both by checking the progress of the disease, and by giving confidence to those whose business it is to help and assist the afflicted; for by these means many of the miseries which accompany pestilence would be alleviated. Nor are such precautions to be thought unavailing, when it is considered how many of the medical attendants in different plagues have escaped; which can only be imputed to their using similar precautions with those we have now stated. Very few of the physicians, or other medical attendants who took care of the soldiers infected with the plague in the army of Egypt, died. And of 13 physicians at Moscow, who formed a committee, by order of the late Empress of Russia, to attend those ill of the plague, one of the most respectable (Mertens) states, that they used no other precautions than avoiding to touch the persons or the clothes of their patients, and that he himself and all his brethren escaped the disorder.

The efforts to be made to extinguish the disease can be all much more completely carried into effect in the beginning, while there are but few ill, than after the contagion has extended to a greater number; therefore every thing that diligence and zeal can dictate must be done in the first instance. On the melancholy supposition that it spreads widely, new measures would become necessary.

As soon as any town is declared to be infected, it ought to be divided into districts. Those inhabiting the sound districts should be at liberty to depart; but, from the tainted districts, none should be permitted to remove, without a certificate of health signed by the justices belonging to that district.

Three justices, at least, in each district should meet daily for the purpose of receiving applications for relief, of granting certificates of health, of providing for the burial of the dead, of conveying the sick to the hospitals, of regulating the supply of provisions, of appointing different officers and attendants, &c. &c.

A council of justices should meet once in the week, or oftener, to consider

consider of the best manner in which their resolutions can be carried into effect. They should also report to the Privy Council or to the Board of Health.

It will be the business of the justices to appoint examiners who may diligently inquire into the state of health in each district. These examiners ought to be persons acquainted with diseases, as surgeons or apothecaries.

Besides examiners, it will be necessary to provide,

1st, Watchmen or guards, to be stationed at the doors of infected houses ;

2d, Messengers, who shall procure every thing that is wanted ;

3d, Carters and carriages, to convey the sick to the hospitals, and others to carry the dead to the places appointed for their burial ;

4th, Constables or overseers, who shall see that the above-mentioned officers perform their duty.

Physicians, surgeons, and apothecaries, and also all other persons, should be enjoined to give immediate notice to the magistrates of every case of infection.

After the disease is spread, the number of sick rendering it impracticable to provide adequately for them while they are dispersed in different parts, or to remove all the other inhabitants from every infected house, it becomes expedient to carry the sick, as early as possible, to some temporary hospital, unless their situation in life enable them to provide for themselves, without risk to the public, in a manner that shall be satisfactory to the magistrates.

Every attention will be necessary to render the hospitals as clean and comfortable as possible, that the sick may not consider it as a hardship they will endeavour to avoid, but as a benefit they will be glad to embrace.

It will be necessary beforehand to provide servants for the hospital, and also a superintendant, upon whom much will depend. There must likewise be carts for the exclusive purpose of removing persons to the hospital. For hospitals may be used houses, barns, sheds, tents, or any other buildings the magistrates can appropriate to this use.

The uninfected part of the community should be divided into sick, suspected, and convalescent, and they must be kept separate ; of the suspected the individuals ought as much as possible to be kept distinct from each other.

The uninfected persons who have been living in the same house with the sick ought to be considered as very much suspected ; they should be confined either in that house, or in some place of observation, for the space of twenty days before they are declared to be sound. During this time they should be examined night and morning by some physician, surgeon, or apothecary ; and, on the first appearance of disease, that person should be taken to the hospital ; and the others who have had communication with him should be obliged to begin their quarantine anew.

* In order the more effectually to prevent the contagion from spreading among the people, all meetings or assemblies of every kind should be discontinued; all places of public amusement should be shut up, as playhouses, &c. and even schools and churches should not be opened; and the places appointed for markets should be removed without the town.

It becomes a duty of the magistrates likewise to appoint burial-grounds. The burials should be conducted privately, and in the night-time, without tolling a bell. And the bodies ought to be deposited at a depth of not less than six feet below the surface.

Moreover, some provision will be necessary for orphans and helpless children; and likewise for those poor people who are distressed by the interruption of their usual business. But these must only be relieved when their situation is properly attested.

For securing the goods of those who are moved from their own houses to the house of observation, the magistrates should direct such measures to be taken as to them may seem most expedient. The apartments not used might be sealed up; the goods and furniture might be shut up in one or more rooms, also to be sealed. What remained in use for the sick, if an hired nurse were employed, should be taken account of, and the inventory entered in a book to be kept by the magistrate.

The intercourse with neighbours should be as little as possible; and any person finding any symptoms of disease upon him should separate himself from others; and the moment the complaint is found to be the plague, or pestilential disease, he should give that notice to others which he would think but fair should be given to him by another in his situation. This cutting off of intercourse has been proposed to go the length of putting every one into quarantine; but there are many difficulties in doing this; and we hope the disease might be cut short before such a measure becomes necessary. Yet it will deserve the attention of the magistrates to promote the wishes of individuals, who, from a desire to cut off intercourse, may propose to confine themselves to their own houses. This may be done by appointing proper persons to go to market for them, and furnish all such families with necessaries. Supposing the disease not to have been cut short in the beginning, but to continue to spread, great advantages would result to the public from this measure.

Any physician, surgeon, or apothecary, who attends the sick of the plague, or other like disease, should be obliged to confine his practice entirely to that department. He should be required to carry a wand, or other mark of distinction, and to avoid, as much as possible, all communication with other people. He should keep one coat for the special purpose of visiting the infected, and, immediately upon his return home each day, should put it off to be properly fumigated. The family residing in the house with him should all be considered as suspected. And, lastly, both he and they should perform a quarantine of twenty days subsequent to his latest exposure to infection.

We

We think it right to state, that there is no known antidote against the contagion of the plague, or other diseases of a similar kind; for it is necessary that people should not expose themselves to danger from a reliance on the virtues of any vain remedies which may be recommended with that confidence which generally attends ignorance, and which is often sufficient to impose upon the unwary. At the same time, we are very far from depreciating the importance of medicine at such a time. For though indeed it furnishes us with no specific to strike at once at the root of the disease, yet does it suggest various means of relieving the most distressing circumstances which attend it, and of assisting the natural powers of the constitution to withstand the baneful effects of its poison.

It may be proper to take notice, in this place, of the employment of fumigations. Those prepared from the mineral acids, in the manner hereafter to be described, may at any time be employed in the sick chambers; but we feel it our duty to discountenance such a reliance on their efficacy as would prevent an attention to the more important object of ventilation.

The above precautions will, in our opinion, afford the greatest possible security to the public, at the same time that due provision is made for the care of the sick. Nor can they give rise to commotion, through fear and apprehension, in any rank of life. To the poor man, what can be more desirable than to know that he will not be abandoned in the most cruel of all diseases? Even in the separation of the sick from those that are well, there is nothing that should create alarm. For the poorest, seeing the reason for which it is done, should rejoice in the prospect it holds out of saving perhaps his wife, his children, or other near relations, from the most imminent danger of destruction; and we do not think it too much to expect, from the information and sense of justice that pervades all ranks, even the poorest in this country, that they should lend their helping hand with the same zeal they would do in the case of fire, or other impending misfortune. Even the sick would find their advantage in giving the earliest notice of their disease. For what could any one ill of such a malady desire more, than that he should have proper assistance himself, and that those most dear to him should be saved from the danger of perishing by contagion derived from him? We beg leave to repeat again, that we do not think we presume too much on the good sense of the country, to suppose that the poor will see the reason and justice of the measures to be taken; and that those in better circumstances will not only readily acquiesce in them, but give their best aid to render them efficacious. By doing which, in every rank of life, while we are discharging a sacred and important duty to our fellow-creatures, we shall all likewise best consult our own safety.

It will be highly important that the nature of any pestilential disorder, which may unhappily be introduced, should be discerned at an early period. It may, therefore, be useful to give a short account of the

the distinctive symptoms by which the plague and the pestilential distemper at Gibraltar are principally characterized.

Persons ill of the plague are attacked with the following symptoms: with cold and shivering; with a lassitude and pain in the limbs; with a loss of appetite, sickness, and sometimes vomiting; also with a pain in the head. These affections are the companions of most fevers at the beginning: but, in the plague, the headach is particularly severe, and there is a confusion and weight in it, and a giddiness which comes and goes. There is an uncommon prostration of strength, and a great oppression about the præcordia, accompanied with an unusual depression of spirits. The sick are inclined to be silent; and though anxiety is strongly marked in the countenance, they make but few complaints. If these symptoms do not put an end to life in 24 hours, they increase in violence through the second or third day, and the progress of the disorder then shows itself in tumours of the lymphatic glands, in the armpits, groins, or neck, or by carbuncles which appear in many parts of the body. And these eruptions are such specific marks of the plague, that one or other of them is almost always present, unless, through the extreme malignity of the disease, or the weakness induced, the patient sinks before they have time to appear. These general notices we conceive to be sufficient to make the attending physician or others aware of what they are to apprehend, and to decide him in taking the necessary measures of precaution which circumstances may require.

Though the history of the pestilential fever which has prevailed at Gibraltar, and on the coasts of the Mediterranean, be not perfect, yet we think it our duty to lay before your Lordships some account of it, according to the best information that has been received of its nature and character.

It begins with cold shivering, pain in the limbs, frequently, but not always, accompanied with sickness, and a disposition to vomit. There is a pain in the head, more or less violent, attended with a suffusion and redness of the eyes. In many the pain of the head is very distressing, and in some cases confined to the forehead, whilst in others it extended very low down between the eyes and cavities of the nose; sometimes the cheeks and the whole countenance were swollen, with a glossy appearance. The pulse in this disorder is full and quick soon after the accession of the fever, but without any difficulty of respiration. The heat of the skin, as soon as the cold went off, became always very great; and this heat, with a full quick pulse and pain in the head, generally continued to increase during the first 36 hours, and then to decrease gradually for the same length of time; so that, at the end of 72 hours, all febrile heat and fulness of the pulse, as well as the pain of the head and limbs, seemed to have left the patient. In this progress of the disease, a bleeding from the nose often happened, and a yellowness of the skin came on, especially if the distress about the stomach had been great, and the effect of vomiting violent. A slight delirium sometimes comes on; but, like the yellowness

yellowness of the skin, it is by no means constant. On the third day of the attack, it frequently happens that the irritability of the stomach is greatly increased; and, in some cases, nothing can afterwards be retained on the stomach. The evacuations from the bowels now likewise become too frequent, attended, especially if active purgatives had been given, with a total suspension of the office of kidneys. No urine seems to be secreted; for there is no inclination to make water, nor any sense of fulness in the region of the bladder, nor any urine to be drawn off by the catheter. These symptoms, viz. an increased irritability of the stomach, the adventitious diarrhoea, and the deficiency of urine, accompanied with hiccough, are considered as extremely unfavourable symptoms, and very few persons recover after their appearance, especially if there be in the ejections from the stomach light ragged filaments of a brownish colour, resembling the washing of the mouth, when port wine or any red wine has been used for that purpose. The great debility of the pulse, with the excessive prostration of strength which now takes place, are symptoms which forebode a fatal termination of the disorder.

The foregoing regulations, though far from being complete, have been drawn up, with care and considerable labour, from a great variety of inquiries which they involved; and we have thought it right to lay them, in their present state, before the Lords of his Majesty's most Honourable Privy Council, in order that it may be seen we have not been neglectful of their Lordships' commands in entering upon the business they had proposed to us. We beg leave to state that we continue to employ ourselves in the further execution of this part of our duty, and that we are at present engaged in considering the best means of purifying goods or houses which may have been exposed to infection. On this point we hope soon to present to his Majesty's Privy Council such observations as appear to us most worthy of attention.

A. S. HAMOND.

J. HUNTER.

F. MILMAN.

H. R. REYNOLDS.

A. MUNRO.

W. HEBERDEN.

LUCAS PEPPS.

J. N. HARNESS.

Board of Health, }
April 30. 1805. }

JA. HERVEY, Secretary.

[Second Report in our next.]

Medical and Chirurgical Society of London.

WE announced the intended establishment and the objects of this society in our last Number. We have now the pleasure to add, that, having met with the most cordial support from many of the most distinguished members of the profession, the purposed plan has been carried into effect, and the officers and council were elected on the 28th June, consisting of the following gentlemen:

WILLIAM

WILLIAM SAUNDERS, M.D. F.R.S. *President.*

WILLIAM BASINGTON, M.D. F.R.S.

JOHN COOKE, M.D. F.A.S.

JOHN ABBENETHY, F.R.S.

SIR WILLIAM BLIZARD, F.R.S.

ASTLEY COOPER, F.R.S. *Treasurer.*

Vice-Presidents.

Ch. Rochemont Aiken, Esq. *Sec.* John Heavyside, Esq. F.R.S.

Matthew Baillie, M.D. F.R.S. Alex. Marcet, M.D. *For. Sec.*

Thomas Bateman, M.D. F.L.S. David Pitcairne, M.D. F.R.S.

Gilbert Blanc, M.D. F.R.S. H. Revell Reynolds, M.D. F.R.S.

James Currie, M.D. F.A.S. H. Leigh Thomas, Esq.

Sir Walter Farquhar, Bart. M.D. James Wilson, Esq. F.R.S.

Thompson Forster, Esq. John Yelloly, M.D. *Secretary.*

Algernon Frampton, M.D.

The meetings of the society are intended to commence in October. In the mean time, any donations of books or communications, with which the society may be favoured, will be received at their apartments in Verulam Buildings, Gray's Inn.

Resolution of the Royal Jennerian Society.

At a special meeting of the Medical Council, July 15. 1805, Dr JENNER in the chair, the council having been informed that various cases have occurred which have excited prejudices against, and occasioned obstacles to, vaccine inoculation,

Resolved,

That a committee be appointed to inquire into the nature and evidence of such cases, and likewise of small-pox, subsequent both to the natural and inoculated small-pox, and that they make report of the same to the council. Also, that they be requested to prepare such a memorial as they may deem best calculated to remove the objections to, and extend the practice of vaccination.

The secretary is requested to summon the committee to meet on Monday the 22d of July, at the Central House, at eight o'clock precisely.

EDWARD JENNER, *Chairman.*

Committee.—Dr Croft, Mr Parkinson, Mr Paytheras, Mr Hingeston, Mr Lewis, Mr Edward Leese, Mr Upton, Dr Yelloly, Mr Ad-dington, Mr Wachsell, Dr Baillie, Dr Willan, Dr Denman, Mr Wilson, Dr Hamilton, Mr Ring, Mr Aikin, Dr Skey, Mr Knights, Mr Field, Dr Adams, Dr Marcet, Mr Pearson, Dr Blanc, Dr Clark.

Central House, Salisbury Square,

Monday, July 15. 1805.

WE are sorry that we are obliged to delay, for want of room, an excellent memorial addressed by a medical committee to the inhabitants of Norwich and of the county of Norfolk, in support of a plan for the extinction of the small-pox, by a general inoculation for the cow-pock.

Extra

[Extract of a Letter from a Correspondent in London.]

Conjectures concerning the Occasion of the sudden Deaths in Dropsies.

EVERY practitioner in much experience must have been frequently surprised by the sudden death of his patient in dropsies, especially in cases of hydrothorax. Although there was no probability of a cure, yet that the sufferer should expire in a few minutes time, and when the preceding appearances were only those in which life commonly continues many weeks or months, is an unlooked-for event. It has been conjectured that the pressure of water in the pericardium, or in the cavities between the lungs and pleura, suddenly stopped the action of the heart, or the performance of respiration; but this explanation is obviously unsatisfactory.

In several instances of these unexpected deaths, I have lately found ossification in the valves of the heart, as well as of the coronary arteries, which I formerly did not look for, as we know that sudden death occurs in other diseases where such ossifications exist. I am disposed to think, that this morbid state may afford a more reasonable conjecture of these terminations in dropsies.

On the Discovery of the disinfectious Power of Mineral Acids.

It is remarkable, that, in the many treatises lately published on the discovery of the use of acid gases for destroying contagion, the name of the late Dr George Fordyce is not once mentioned, yet, if reference be had to his pupils, it will be found that he proposed the muriatic acid gas for destroying infection earlier than Moreau. In the third edition of Fordyce's Elements, 1761, p. 170, for preventing the jail fever, &c. it is proposed to destroy the putrid matter in the air by the acids converted into vapour, as in the plague. And in the plague, it is said, p. 154, "The putrid vapour in the air may be destroyed by impregnating it with acids; as by burning great quantities of wood, or detaching great quantities of concentrated muriatic acid from sea-salt by the vitriolic, and evaporating it." If the nitrous acid gas possess the advantages lately published over the other acid gases (which I do not believe), it will be most efficacious to disengage nitrous gas in the infected rooms and other places, because it will be most likely, by being more readily diffused, to produce a more extensive diffusion of nitrous acid gas.

On the Mixture of Vaccine and Variolous Matter.

I AM inclined to think, that the experiments of the commixture of the two infectious matters instituted by the late Dr Woodville and Dr Pearson are not accurate, or at least that their results will not be found commonly true. I have repeatedly, in the course of the last two years, inserted a mixture of equal parts of vaccine and variolous matter into from three to six punctures in each patient's arms, and in

no one instance has the small-pox been produced; but, except now and then a failure of effect altogether, uniformly the vaccine pock has been excited; the matter of which pock excited the genuine cow-pock in others. Yet I have found that the small-pox frequently occurred, not only when the vaccine inoculation was instituted on the same day with the variolous on distinct parts, but also when the variolous was performed two days later than the vaccine; although the progress seemed to be equal of the two kinds of pock in the parts inoculated. Are we not hence warranted to conclude, that the vaccine matter counteracts the agency of the variolous in the same part to which the two matters are applied, although, *a priori*, it seems just as reasonable that the variolous should counteract the vaccine in these circumstances? When the morbid matters are inserted distinctly in different parts on the same day, or even the one on the day after the other, if both take effect locally, almost always the small-pox eruption is produced, although the vaccine pock proceeds as regularly through its stages as if unattended by the small-pox, and the matter of it produces always the distinct cow-pock on inoculation. The small-pox also frequently occurs, although the variolous matter be inserted three days after the vaccine inoculation; but never, as I have seen, at a later period, provided the vaccine matter take effect as usual, so as to produce a small vesicle by the fifth day. I am hence disposed to infer, that the constitutional unsusceptibility of the small-pox is not effected immediately by a sudden impulse upon the system, but is a change gradually wrought during several days.

1st, Because it frequently happens that the small-pox eruption occurs on the 12th and even 13th day of vaccine affection, when the cow-pock is advanced in the scabbing stage, and when it is taken for granted that the constitutional change, by which unsusceptibility of the small-pox is produced by the vaccine inoculation, has taken place as early as the 8th, 9th, or 10th, or at least by the 11th day. The small-pox occurs at this period of the cow-pock, when the variolous inoculation has been instituted even three days after the vaccine.

2^{dly}, Because the natural small-pox has frequently broken out on the 13th day, and in the stage of the vaccine pock just mentioned.

Small-pox again inoculated in London.

THE many late failures of supposed cow-pock to prevent the small-pox has excited in some parts so much clamour among the lower orders of people, that they insist upon being inoculated for the small-pox at some of the public institutions. It is to be expected that many more similar failures will from time to time occur, from the numbers inoculated in the same manner as those who have already taken the small-pox; as, however, the proportion is still very small of the cases of small-pox after cow-pock, even from under the hands of unskilful inoculators, and as scarcely a single one occurs among those inoculated by experienced and careful practitioners, there is little reason to doubt, that in time the small-pox will be extinguished in the British realms.

Extract of a Letter from Dr James Cassels, Surgeon in Lancaster.

THE following is some account of the *Black Drop*, a concentrated preparation of opium known above 50 years ago to many people in this end of the country, and a favourite medicine with some practitioners.

According to my information, there are two preparations now in use; in one rectified spirit of wine is the menstruum, in the other the opium is dissolved in a vegetable acid. The receipt for the former is this:

Take of purified opium five ounces;
 ——— pimento and cinnamon, of each two drams;
 ——— saffron and Seville orange peel, of each one dram;
 ——— rectified spirit of wine, a pint;

Digest with a gentle heat a week, and strain the liquor through flannel with a screw-press, then add two or three ounces of powdered sugar-candy.

The other receipt is, more properly speaking, an infusion than a tincture of opium, and is thus prepared:

Take of opium four ounces;
 ——— juice of quinces or verjuice, four pints;

Digest three weeks, then add

Saffron, one ounce;

Cloves, nutmegs, and cinnamon, of each an ounce in coarse powder;

Continue the digestion a week, strain through flannel, and evaporate the strained liquor to the consistence of syrup. Lemon juice, or Mr Coxwell's concentrated acid of lemons, I apprehend, will answer the purpose equally well as either of the vegetable juices above mentioned.

One drop of these preparations is reckoned equal to three or four of the common tincture of opium. The intelligent reader will soon discover that neither the one nor the other medicine is new, for Dr Jones, in his *Mysteries of Opium revealed*, published above an hundred years ago, makes mention of a preparation of opium similar to the second receipt, under the title of *laudanum liquidum cydoniacum*; and Quincy, in his *Dispensary*, published in the year 1722, not only takes notice of the same medicine, but adds receipts for other tinctures of opium with aromatics, which, I have no doubt, will be found equally efficacious as either of the above preparations, or what is sold under the name of black drop.

As I find the common preparations of opium answer all the intentions that can be expected from the known qualities of this best of medicines, I never employ any other. Where I know they are apt to cause sickness and headach, the addition of an aromatic and a neutral salt, as the water of acetite of ammonia, has been attended with a very pleasing effect.

Extract

Extract of a Letter from Fabbroni of Florence, dated 2d April 1805, on the Fever which was epidemic at Leghorn in 1804.

A GASTRIC bilious fever, one of those which Pinel would call *ataxiques adynamiques*, has ruined the commerce of Leghorn, and of all Tuscany, because some evil disposed persons propagated a report that it was the yellow fever of America. I have been sent there twice by the government to establish precautions to preserve the public health, but solely in a political view. I have not remarked that the fever was at all contagious, neither through the medium of persons nor of goods; nevertheless, we have been separated from the rest of the world by cordons of troops; we have been prevented from passing them, and our merchandise has not been received, although three months have elapsed since a single individual was sick. In that populous city, containing 60,000 souls, this fever, confounded with a totally different species of malignant fever, carried off only 700 individuals in the space of four months! The day that, for the satisfaction of our neighbours, we opened an hospital for those ill of this fever, we only found 14 patients to be sent to it. I assure you poor Tuscany, innocent as it is, has lately been dreadfully afflicted both by men and by nature, which has sorely visited us with earthquakes, inundations, and unfavourable harvest weather.

Dr RICHARD PEARSON of London wishes it to be known, that the articles belonging to the department of medicine, which he has contributed to the new Cyclopædia, now publishing under the superintendence of Dr Rees, are comprised within the latter part of the letter A, and the letter B, beginning with ASTHMA, and ending with BULIMIA. They relate wholly to the description and treatment of internal diseases, with the exception of the articles BATHING (*medicinally considered*); BLEEDING; BLOOD (*morbid appearances of*); and BILE (*diseased conditions of*).

Dr. R. P. would gladly have gone on co-operating with those gentlemen (eminently distinguished for their knowledge in the various branches of science,) whose names have been announced in the Cyclopædia prospectus, towards the completion of a work which promises to rival, if not to surpass, the most celebrated works of the kind which have been published in other countries; but he found that he could not spare sufficient time from his other employments, for that purpose.

Dr R. P. has thought it right to make this declaration, that if there be any thing faulty or unsatisfactory in the articles relating to the practice of physic from ASTHMA to BULIMIA inclusively, no censure may attach either to his predecessors or his successors in that department.

Dr R. P. can corroborate from his experience what Dr James Wood has stated in No. II. of the Edinburgh Medical and Surgical Journal, respecting the medicinal powers of the muriate of lime in

ferofulous cases, which he (Dr. R. P.) introduced about six or seven years ago into the General Hospital at Birmingham, before he removed from thence to the metropolis. He must observe, however, that the preparation which he then employed, and has since prescribed, is not the same with Dr Wood's; but is made by first saturating the lime with muriatic acid, then diluting the compound with water, and afterwards evaporating to dryness. The residuum, while yet hot, is scraped out into a wide-mouthed bottle, provided with a ground stopple. Of this deliquescent salt, the dose is from three to five grains to children, and from 15 to 30 grains to adults, once or twice a-day, dissolved in gruel or sugar and water. A letter which he wrote on this subject, signed with the initials R. P. was inserted in the 3d volume of the London Medical Review and Magazine, published in 1800.

On the 12th of September, the SENATUS ACADEMICUS of the University of Edinburgh conferred the degree of Doctor in Medicine on the following Gentlemen, after having gone through the appointed examinations, and publicly defended their respective inaugural dissertations.

FROM ANTIGUA.

David Aird,

De Sanitate in India Occidentali tuenda

FROM ENGLAND.

Matthew Gleave,

De Lue Venerea

William Greaves,

De Scarlatina

Alexander R. Sutherland,

De Contagione

FROM IRELAND.

Henry Bleannethasser,

De Hydrothorace

James Gloster, A. B. T.C.D.

De Asphyxia

Edmond Glover,

De Dysenteria

Henry Harris,

De Hydrocele

Patrick Kean,

De Phthisi Pulmonali

Charles Murphy,

De Cynanche Maligna

Archibald Nicolls,

De Cynanche Tonsillari

William Wigmore,

De Pneumonia

William Galbraith Wray,

De Scarlatina Anginosa

FROM SCOTLAND.

Arthur Edmondston,

De Cholera

Alexander Halliday,

De Asbmate

Gilbert Macracken,

De Pingui et Pinguitudine

Alexander Macdonald,

De Rheumatismo

David MacLagan,

De Sanitate tuenda

John Macleod,

De Syphilitide Infantium

John Mitchell,

De Scarlatina

John Charles Ogilvie,

De Hamatemate

James Sanders,

De Hernia Crurali

FROM

FROM WALES.

William Bulkely Parry, *De Patria Desiderio*

FROM VIRGINIA.

John Raines Lucas, *De Hydrocephalo Acuto**University of Edinburgh.*

THE classes for the different branches of Medicine will be opened for the ensuing session as follows:

CLASSES.	DAY AND HOURS.	PROFESSORS.
Anatomy and Surgery, -		1 Drs Monro
Chemistry and Chemical Pharmacy, - - - -		10 Dr Hope
Dietetics, Materia Medica, and Pharmacy, - - -	Wednesday, 8	Dr Jas. Home
Theory of Physic, - - -	Oct. 30. 11	Dr Duncan
Practice of Physic, - - -	9	Dr Gregory
Theory and Practice of Midwifery, - - - -	3	Dr Jas. Hamilton
Natural History, - - -	- - - -	Mr Jamieson

Two courses of Practical Anatomy will be given, under the superintendence of Dr Monro jun. and Mr Fyfe, the one to begin on the 1st November, and the other on the 1st of February.

Clinical Lectures on the cases of patients in the Royal Infirmary, by Dr Duncan and Dr Home, upon Tuesday and Friday,—the first lecture by Dr Duncan on Tuesday, Nov. 5. at 5 p. m.

Clinical Surgery by Mr Russell, the first lecture on Monday, Nov. 4. at 5 p. m.

Dr Rutherford will begin a course of Botany in May 1896.

University of Glasgow.

THE Medical Lectures in the University of Glasgow will begin on Tuesday the 5th November, at the following hours:

Dietetics, Materia Medica, and Pharmacy, by Dr Millar, at 10 o'clock forenoon;

Midwifery, by Mr Towers, at 11;

Theory and Practice of Physic, by Dr Freer, at 12;

Anatomy and Surgery, by Dr Jeffray, at two o'clock afternoon;

Chemistry and Chemical Pharmacy, by Dr Cleghorn, at seven;

Clinical Lectures on the cases of patients in the Royal Infirmary, by Dr Cleghorn and Dr Freer. The first lecture by Dr Cleghorn, on Tuesday evening the 12th November, at six o'clock.

Dr Brown will begin his Lectures on Botany about the beginning of May next.

Regulations enacted by the Senate of the University of Glasgow respecting degrees in Medicine.

I.—That before any person can be allowed to be a candidate for a degree in medicine in this university, he shall appear personally before the senate, and lay before them evidence that, during the space of three years, or sessions of six months each, he has regularly attended in some university or universities, or in some medical school or schools of reputation, the following medical classes; viz. Anatomy and Surgery, Chemistry and Pharmacy, the Theory and the Practice of Physic, Materia Medica and Botany.

II.—That he shall bring forward evidence that, during one year at least, he has attended medical classes in this university.

III.—That the candidate shall undergo three separate examinations in private, by the medical professors of the university, and write a commentary on an aphorism of Hippocrates, and another on a case of disease propounded to him by the said examiners. The first examination shall be on anatomy and physiology; the second on the theory and practice of physic; and the third on chemistry, materia medica, pharmacy, and botany.

IV.—That the examiners shall report to the senate their opinion respecting the medical knowledge of the candidate; and if their report be favourable, his name, as a candidate for a degree, shall be entered in the minutes of senate, and a day fixed, when the candidate shall read his commentaries on the aphorism and case, and answer such questions, on the several branches of medical science, as shall be put to him by the examiners in presence of the senate. If the senate be of opinion that the candidate has shown himself worthy of a degree, it shall be conferred, in presence of the senate, by the Vice-Chancellor, provided the candidate has not published a thesis, which he may, or may not do, according to his own option; but if he has published a thesis, he must defend it, and the degree must be conferred in the comitia.

V.—The whole of the examinations shall be carried on, and the commentaries on the aphorism and case must be written, in the Latin language.

St George's Hospital.

LECTURES ON PHYSIC AND CHEMISTRY.

THE first Monday in October next will commence a course of lectures on physic and chemistry, at the laboratory in Whitcomb Street, Leicester Square, at the usual morning hours; viz. on the therapeuticks at a quarter before eight; on the practice of physic at half after eight; and on chemistry at a quarter after nine o'clock.

These lectures are delivered every morning, except on Saturdays, when, at nine o'clock, a clinical lecture is given on the cases of Dr Pearson's patients in St. George's Hospital.

By George Pearson, M. D. F. R. S. of the College of Physicians, and Senior Physician to St. George's Hospital, &c. &c.

N. B. Proposals may be had at St. George's Hospital, and at No. 52. Leicester Square.

Original

Original Vaccine Pock Institution, No. 44. Broad Street, Golden Square, 6th September, 1805.

Mr Benjamin Jesty, farmer of Downhay in the Isle of Purbeck, having (agreeably to an invitation from the Medical Establishment of the Original Vaccine Pock Institution, Broad Street, Golden Square) visited London in August 1805 to communicate certain facts relating to the Cow Pock Institution, we think it a matter of justice to himself, and beneficial to the public, to attest that, among other facts, he has afforded decisive evidence of his having vaccinated his wife and two sons, Robert and Benjamin, in the year 1774; who were thereby rendered unsusceptible of the small-pox; as appears from the exposure of all the three parties to that disorder frequently during the course of 31 years, and from the inoculation of the two sons for the small-pox 15 years ago. That he was led to undertake this novel practice in 1774, to counteract the small-pox, at that time prevalent at Yctminster, where he then resided, from knowing the common opinion of the country, ever since he was a boy (now 60 years ago), that persons who had gone through the cow-pock naturally, i. e. by taking it from cows, were unsusceptible of the small-pox; by himself being incapable of taking the small-pox, having gone through the cow-pock many years before; from having known many individuals, who, after the cow-pock, could not have the small-pox excited; from believing that the cow-pock was an affection free from danger; and from his opinion that, by the cow-pock inoculation, he should avoid ingrafting various diseases of the human constitution, such as the "evil, madness, lues, and many bad humours," as he called them.

The remarkably vigorous health of Mr Jesty, his wife, and two sons, now 31 years subsequent to the cow-pock, and his own healthy appearance, at this time 70 years of age, afford a singularly strong proof of the harmlessness of that affection; but the public must, with particular interest, hear that, during the late visit to town, Mr Robert Jesty very willingly submitted publicly to inoculation for the small-pox in the most rigorous manner; and that Mr Jesty also was subjected to the trial of inoculation for the cow-pock after the most efficacious mode, without either of them being infected. The circumstances in which Mr Jesty purposely instituted the vaccine pock inoculation in his own family, viz: without any precedent, but merely from reasoning upon the nature of the affection among cows, and from knowing its effects in the casual way among men, his exemption from the prevailing popular prejudices, and his disregard of the clamorous reproaches of his neighbours, in our opinion, will entitle him to the respect of the public for his superior strength of mind. But, further, his conduct in again furnishing such decisive proofs of the permanent antivariolous efficacy of the cow-pock, in the present discontented state of mind in many families, by submitting to inoculation, justly claims at least the gratitude of the country. As a testimony of our personal regard, and to commemorate so extraordinary a

fact, as that of preventing the small-pox by inoculating for the cow-pock 31 years ago, at our request, a three-quarter length picture of Mr Jetty is painted by that excellent artist Mr Sharp, to be preserved at the Original Vaccine Pock Institution.

GEO. PEARSON,	} Physicians.	FRAS. RIVERS,	} Visiting Apoth.
LAW. NIELL,		EV. A. BRANDE,	
THOS. NELSON,		PH. DE BRUYN,	
T. KEATE,	} Consulting Surg.	JOHN HEAVISIDE,	} Treasurers.
T. FORSTER,		THOMAS PAYNE,	
JOSEPH CONSTAN-	} Surgeons.	WILLIAM SANCHO,	} Secretary.
TINE CARPUE,			
J. DORATT,			

*Account of Diseases treated at the Public Dispensary, Carey-Street,
from 31st May to 31st August, 1805.*

ACUTE DISEASES.

	No. of Cases.		No. of Cases.
Typhus - - - - -	3	Ophthalmia - - - - -	2
Quotidiana - - - - -	4	Catarrhus - - - - -	41
Tertiana - - - - -	2	Pneumonia - - - - -	11
Scarlatina anginosa - - - - -	2	Pertussis - - - - -	5
Rubeola - - - - -	2	Enteritis - - - - -	2
Variola - - - - -	7	Cholera - - - - -	5
Erysipelas - - - - -	3	Hysteritis - - - - -	1
Cynanche tonsillaris - - - - -	3	Febris Infantum - - - - -	4
----- parotidæa - - - - -	2	Rheumatismus - - - - -	11

CHRONIC DISEASES.

Cephalæa - - - - -	21	Enterodynia - - - - -	9
Hemicrania - - - - -	2	Tabes mesenterica - - - - -	2
Vertigo - - - - -	1	Verminatio - - - - -	20
Otalgia - - - - -	1	Tænia - - - - -	1
Catarrhus chronicus et dysp-		Hæmorrhoids - - - - -	8
nœa - - - - -	27	Hæmaturia - - - - -	2
Hæmoptysis and Phthisis - - - - -	29	Dysuria - - - - -	8
Asthma - - - - -	2	Nephralgia - - - - -	1
Aneurysma arter. carot. - - - - -	1	Menorrhagia - - - - -	12
Pleurodyne - - - - -	1	Amenorrhœa - - - - -	6
Dyspepsia - - - - -	47	Chlorosis - - - - -	4
Asthénia - - - - -	27	Leucorrhœa - - - - -	7
Icterus - - - - -	2	Prolapsus Uteri - - - - -	1
Hepatitis chronica - - - - -	2	Hysteria - - - - -	5
Colica - - - - -	2	Epilepsia - - - - -	1
Colica Pictonum - - - - -	7	Melancholia - - - - -	1
Diarrhœa - - - - -	6	Hemiplegia - - - - -	3
Dysenteria - - - - -	6	Paralysis Saturnina - - - - -	2
		Paralysis	

No. of Cases.		No. of Cases.	
Paralyſis rheumatica	1	Rachitis	1
Rheumatismus chronicus	47	Aphthæ	2
Lumbago et ſciatica	7	Porrigo (Scald-head)	3
Syphilis	2	Urticaria	3
Gonorrhœa	3	Impetigo (running tetter)	6
Schirrus Uteri	1	Scabies (Itch)	7
Aſcites	8	Prurigo	3
Hydrothorax	2	Lichen	6
Anaſarca	9	Purpura	1
Tympanites	2	Pſoriasis (Scaly tetter)	2
Scrofula	4		

On peruſing the preceding catalogue, the reader would be almoſt led to ſuppoſe that it contained a register of the diſeaſes of the ſpring or winter; ſince rheumatism and catarrhal diſorders are among the moſt numerous in the liſt, and the uſual complaints of the alimentary canal, peculiar to the ſummer months, are few. During the months of June and July, the temperature was generally cold, the viciffitudes frequent, and there was much rain. The catarrhal complaints chiefly occurred during thoſe months; and the few caſes of cholera which have appeared, happened during the laſt fortnight. Sydenham conſidered the cholera as a diſeaſe of Auguſt almoſt excluſively, and ſeems to attribute it chiefly to the uſe of fruit. Seasons ſuch as the laſt and the preſent ſummer, however, afford a ſufficient refutation of theſe obſervations of that great phyſician, and prove that cholera and bilious diarrhœa occur moſt frequently in whatever month the heat is greateſt. They were conſiderably more frequent during the hot month of September 1804, than in the preceding Auguſt, although the ſummer fruits are conſiderably more plentiful in the latter. We have no evidence, indeed, that the uſe of fruits has any tendency to increaſe the biliary ſecretion, upon which the diſeaſes in queſtion immediately depend; but in hot climates the bile is generally exuberant, and thoſe diſeaſes abound. They are moſt frequent too, we believe, in thoſe who indulge in animal food, or in vinous and ſpirituſous liquours; ſo that fruit and vegetables would rather ſeem to be a preventive than a cauſe of exuberance of bile. Dr Cullen, therefore, was without doubt correct in attributing the diſeaſe ſolely to external heat.

A few caſes of typhus, ſcarlet fever, and meaſles have occurred during the preſent month; but there appears to be no virulence of contagion connected with them, and they do not readily ſpread. The only diſeaſe which can be conſidered as epidemic at preſent is the ſmall-pox. It is lamentable that the prejudiced and illiberal attacks that have lately been made againſt the cow-pock, founded upon the moſt unſubſtantial evidence, and ſpecious only to thoſe who are ignorant of the difficulty and the caution required to eſtabliſh a medical truth, ſhould have materially retarded the progreſs of that ſalutary preventive. Some of the caſes of ſmall-pox in the liſt were of a malignant ſpecies, and proved fatal; and a conſiderable number has fallen under our obſervation, beſides thoſe who applied to the diſpenſary for aſſiſtance.

 PART IV.

 LIST OF NEW BOOKS.

DOMESTIC.

ANSWERS to all the objections hitherto made against the Cow-pock. By Joseph Adams, M. D. 1s. The profits arising from the sale to be given to the small-pox and inoculation hospitals.

Anatomia Britannica. 3 vols. 12mo. 1804.

A Short Account of the Disease in Corn called by farmers the Blight, the Mildew, and the Rust. By Sir Joseph Banks, Bart. K. B. F. R. S. 8vo. illustrated by an engraving. 1805.

The Anatomy of the Human Body, vol. 4. containing the anatomy of the viscera of the abdomen, the parts in the male and female pelvis, and the lymphatic system, with an appendix. By Charles Bell, Fellow of the Royal College of Surgeons Edinburgh. 8vo. London. 1804.

A Meteorological Journal of the year 1804, kept in Paternoster Row. By William Bent. 8vo. 1s. 6d.

The Works complete of John Brown, M. D. of Edinburgh, consisting of, 1. Observations on former systems of medicine, and outlines of a new doctrine. 2. A refutation of the doctrines of Spasm. 3. Elements of medicine, a corrected translation. To which is prefixed, a biographical account of the author. By his son William Cullen Brown, M. D. 3 vols. 8vo. London. 1804.

The Medical and Physical Journal, conducted by T. Bradley, M. D. R. Batty, M. D. and A. A. Noehden, M. D. vol. 12. and 13. 8vo. London. 1804. and 1805.

Practical Observations concerning Sea-Bathing; with remarks on the use of the warm bath. By A. P. Buchan, M. D. 8vo. London. 1804.

The Popular Compendium of Anatomy, containing also an article on suspended animation. By William Burke, surgeon. 12mo. London. 1804.

A Practical Treatise on the Efficacy of Stimulobium, or Cowhage, (the *dolichos pruriens* of Linnæus,) internally administered in diseases occasioned by worms; the ninth edition, considerably enlarged. By William Chamberlaine. 12mo. London. 1805.

A Treatise on the Prevention of Diseases incident to Horses, from bad management in regard to stables, food, water, air, and exercise. To which are subjoined, observations on some of the surgical and medical branches of farriery. By James Clark, farrier to his Majesty for Scotland. Fourth edition. 8vo. London. 1805.

Clutterbuck

Clutterbuck de Sede et Natura Febris. 8vo. London. 1804.

Practical Observations on Insanity, and suggestions towards a mode of treating diseases of the mind. To which are subjoined, remarks on medical jurisprudence. By Joseph Malon Cox, M. D. 8vo. 5s. London. 1804.

An Essay on the Ectropion, or Inversion of Eyelids. By P. Cramp-ton, M. D.

The London Dissector. 12mo. London. 1804.

An Introduction to Midwifery. By T. Denman, M. D. Fourth edition; corrected. 2 vol. 8vo. London. 1805.

Observations on Water, with a recommendation of a more convenient and extensive supply of Thames-water to the metropolis and its vicinity, as the best means to counteract pestilential or pernicious vapours. By R. Dodd. 2s. 6d. boards.

Annals of Medicine for the year 1803, exhibiting a concise view of the latest and most important discoveries in medicine and medical philosophy. By Andrew Duncan, sen. and jun. M. D. &c. 8vo. Edinburgh. 1803.

The Edinburgh New Dispensary. The second edition, enlarged and much improved. By Andrew Duncan, jun. M. D. &c. 8vo. with plates. Edinburgh. 1804.

A Treatise on the Hydrocele. By Sir James Earle, F.R.S. Third edition, with improvements. 8vo. London. 1805.

An Account of two Cases of Gout which terminated in death, in consequence of the external use of ice and cold water. By A. Edlin. 8vo. London. 1804.

An Appendix to Practical Observations on the nature and treatment of exasperated symptoms of the Venereal Disease; containing thoughts on the nature and management of the venereal bubo, particularly in its obstinate state. By Edward Geoghegan, surgeon to the Dublin General Dispensary. 8vo. London. 1804.

Important Discoveries and Experiments on Ice, Heat, and Cold. By the Rev. James Hall, 2s. 6d.

The Death-warrant of the French Theory of Chemistry. By Robert Harrington, M. D. 8vo. 7s. London. 1804.

Observations on the simple Dysentery and its Combinations; containing a review of the most celebrated authors who have written on the subject, and also an investigation into the source of contagion in that and some other diseases. By William Harty, M. D. 8vo. London. 1805.

A Clinical History of Diseases, Part 1. being, 1. A clinical history of the acute rheumatism; 2. A clinical history of the nodosity of the joints. By John Haygarth, M.D. F.R.S. Edin. 8vo. London. 1805.

Proceedings of the Board of Health in Manchester. 12mo. 4s. bds.

Experiments proving Vaccination, or Cow-pock Inoculation, to be a permanent security against small-pox, with facts and remarks. By Samuel Hill, surgeon, Portsea. London. 1804.

Salutary

- Salutary Caution respecting Gout; in which the doctrines maintained in a recent publication by Dr. Kinglake are refuted. By John Hunt, author of *Historical Surgery*. 2s. 6d.
- Culina Famulatrix Medicinæ*; or Receipts in Cookery, with a medical commentary. By A. Hunter, M. D. York. 4s.
- A System of Mineralogy. By Robert Jamieson, Regius Professor of Natural History in the University of Edinburgh, &c. vol. 2. 8vo. London. 1805.
- A Mineralogical Description of the County of Dumfries. By R. Jamieson. 6s.
- A Treatise on the Process employed by Nature in suppressing the Hæmorrhage from divided and punctured Arteries, and on the use of the Ligature; concluding with observations on secondary hæmorrhage. The whole deduced from an extensive series of experiments. By J. F. D. Jones, M. D. Member of the Royal College of Surgeons London. 8vo. illustrated with 15 plates. London. 1805.
- A Reply to Mr Edlin's two Cases of Gout. By Robert Kinglake, M. D. 2s. 6d.
- Tables of the Materia Medica. By Jeremiah Kirby, M. D. &c. 8vo. Edinburgh. 1805.
- A Medical and Experimental Inquiry into the origin, symptoms, and cure of constitutional Diseases, particularly scrofula, consumption, cancer, and gout; illustrated by cases. By W. Lambe, M. D. 5s. 6d.
- A General Treatise on Cattle; comprehending the breeding, management, improvement, and diseases. By John Lawrence. 8vo. 12s.
- Observations on some late Attempts to depreciate the value and efficacy of Vaccine Inoculation. By Samuel Merriam, 8vo. London. 1805.
- Observations on the Change of Public Opinion in Religion, Politics, and Medicine; on the conduct of the war; on the prevailing diseases in Great Britain; and on the medical arrangements of the army and navy. By John Miller, M. D. 2 vol. 4to. 3l 11s. 6d. London. 1804.
- Edinburgh Medical and Physical Dictionary. By Robert Morris, M. D. James Kendrick, Surgeon, F. L. S. and others. 2 vol. 4to. with 50 plates. London. 1805.
- A Treatise on the Cow-pock. By Benjamin Moseley, M. D. 8vo. 4s. London. 1805.
- Observations on the Climate of Ireland, and researches concerning its nature from very early periods to the present time. By William Paterfon, M. D. &c. 8vo. London.
- A General Dictionary of Chemistry. By W. Nisbet, M. D. 8s. 6d.
- Outlines of a Plan to stop the progress of the malignant contagion which rages on the shores of the Mediterranean, if it should make its way to this country. By Richard Pearson, M. D. 8vo. 6s. 6d. London. 1804.
- Dialogues

Dialogues in the Shades, with Preface and Postscript. By W. Periv, M. D. Dedicated to medical practitioners, and to all persons liable to fits of the gout; also recommended to every purchaser of Dr Kingham's Dissertation on Gout, &c. 8vo. London: 1804.

Volume the fifth, including the 19th Part, of the Abridgement of the Philosophical Transactions of the Royal Society of London. 4to. 2l 2s.

An Inquiry into the Efficacy of Oxygen in the cure of Syphilis; with observations on its application in various disorders. By Charles Platt, Surgeon. London. 1804.

A Scriptural View of Pestilence, particularly of that dreadful pestilence the small-pox, with considerations on the cow-pock, in two Sermons; the first preached before the University of Cambridge, on Sunday February 24; the second in the parish church of Hixton, on Sunday March 3. 1805; with copious notes and illustrations. By the Rev. James Plumptre, M. A. &c. 8vo. London. 1805.

The Twenty-fourth Report of the Society for bettering the Condition of the Poor. 1s.

A General View of the Writings of Linnaeus. By Richard Pulteney, M. D. F. R. S. second edition, with memoirs of the Author, 4to. 1l 10s 6d boards.

An Examination of that part of the Evidence in relation to Cow-pock, which was delivered to a Committee of the House of Commons by two of the Surgeons of St Thomas's Hospital, with remarks on inoculated small-pox. By W. R. Rogers. With a coloured engraving. 2s.

Plants of the coast of Coromandel, from drawings and descriptions presented to the Court of Directors of the East India Company. By William Roxburgh, M. D. No. 8. 1l 1s.

An Account of Indian Serpents, published by order of the Court of Directors of the East India Company, under the superintendence of Patrick Ruffel, M. D. with plates. 2d part of vol. 1. 1l 16s.

An Essay on Pestilential Diseases. By James Rymer, Surgeon, R. N.

A Report of the Progress of Vaccine Inoculation in Bengal. By John Sheolbred. 2s.

A Series of Essays introductory to the Study of Natural History. By Jeremiah Skrimshire, M. D. 2 vol. 18mo. 7s.

A Letter to William Witherforce, Esq. M. P. By James Carmichael Smyth, M. D. containing remarks on a pamphlet entitled, An Account of the Discovery of the Power of Mineral Acid Vapours to destroy Contagion, by John Johnstone, M. D. published in 1803. 8vo. London. 1805.

Medical Collections on the Effects of cold Water, as a remedy in certain diseases; with an appendix, containing an account of some experiments made with a view to ascertain the effects of cold water on the pulse. By John Edmonds Snopck, M. D. licentiate of the College of Physicians London, physician in Bristol, &c. 8vo. London. 1805.

**Observations on the Cow-pock, showing that it originates in scrophulous
with cases to prove that it is so security against the small-pox, &c.**

By R. Squirel, M. D.

**Remarks on Sea-water, with observations on its application and ef-
fects internally and externally, as conducive to health.** By Charles
Taylor, M. D. Secretary to the Society for the Encouragement of
Arts. 8vo. 2s 6d London. 1805.

Thesaurus Medicamentorum; By a Member of the London College of
Physicians, and Author of the *Materna Alimentaria*. Third edition,
8vo. London. 1804.

Transactions of the Royal Society of Edinburgh. Third and con-
cluding part of the fifth volume. 4to. 7s 6d. Edinburgh. 1805.

**An Address to the Inhabitants of all large towns, recommending
Vaccination.** 2d.

**The Report of a Medical Committee on the cases of supposed small-
pox after vaccination, which occurred in Falwood's Rents, Hol-
born, in August and September 1804.** 8vo. 1s London. 1804.

**Werneriana, or Short Characters of Earths; with notes according
to the improvements of Klaproth, Vanquelin, and Havy.** By
Terra filius. 8vo. London. 1805.

**Cases of two extraordinary Polypi removed from the Nose, and de-
scribing an improved instrument for the fistula in ano, with obser-
vations on that disease.** By Thomas Whately, Surgeon. 2s.

**The Principles of Botany and Vegetable Physiology, translated from
the German of D. C. Ludwig Willdenow, Professor of Botany at
Berlin.** 8vo. London. 1805.

**Description and Treatment of Cutaneous Diseases, Order, III. Rashes.
Part I. containing the varieties of rubecula and scarlatina.** By R.
Willan, M. D. F. R. S. A. 4to. London. 1805.

A Treatise on Febrile Diseases. By A. Philips Wilson, M. D.
F. R. S. of Ed. and A. vol. 4. 8vo. London. 1804.

The Philosophy of Physic. By the Rev. William Wilson. 12mo.
London. 1804.

**A Treatise on the State of the Poor in Sickness, with a proposal of
a plan for their relief; selected from Essays lately published.** By
Richard Worthington, M. D. With some additions. 1804.

**An Enquiry into the Nature and Action of Cancer, with a view to
the establishment of a regular mode of cure by natural separation.**
By Samuel Young, Esq. Member of the Royal College of Sur-
geons London. 8vo. London. 1805.

FOREIGN.

**ALBERT J. L. M. D. Nouveaux elements de Therapeutique et de
Matiere Medicale suivis d'un Essai sur l'Art de formuler,** 2 vol.
8vo. Paris.

**Baumes, J. B. Th. Professeur, Fondemens de la Science methodique
des maladies.** 4 vol. 8vo. Montpellier. an. x.

Bichat Xavier, Traite complet d'Anatomie descriptive. 5 vol. 8vo.
Paris.

- Bonnafoi des Males, J. M. D. *Traité de la nature et du traitement de la phthisie pulmonaire.* 8vo. Paris. an. xii.
- Boulet J. B. J. *Dubitaciones de Hippocratis Vita, patria, genealogia, foetus, mythologia et de quibusdam ejus libris multis antiquioribus quam vulgo creditur.* 4to. Paris. an. xii.
- Vraie Theorie Médicale, ou exposé periodique et développement de la Theorie de Brown. II. Année, No. xiii. tome. v. 8vo. Paris.
- Calvet, M. Manuel, théorique et pratique pour le traitement des maladies vermineuses. 8vo. Paris. an. xiii.
- Deneux, L. Ch. *Essai sur la rupture de la matrice pendant la grossesse et l'accouchement.* 4to. Paris. an. xii.
- Default, Ph. J. chirurgien en chef de l'Hôtel Dieu. *Cours clinique et pratique de clinique extreme; ou extrait des ses leçons rédigées et publiées.* Par J. J. J. Cassius; M. D. 2 vol. 8vo. Paris. 1803.
- Desbamps, fils J. L. M. D. *Traité des maladies des fosses nasales et de leurs suites.* 8vo. Paris. 1804.
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I N D E X.

<i>Abernethy, Mr.</i> , on tumours	90	Barytes, muriate of, how prepared from the sulphate	490
— on diseases resembling syphilis	95	<i>Bateman, Dr.</i> , case of a tumour in the brain	150
— surgical observations	90	— account of the London fever institution	317
— experiments on perspiration	172, 176, 178	— quarterly reports of Carey-Street dispensary	123, 246, 388, 514
Ablution and affusion, comparative merits of	71	<i>Batt, Dr.</i> , on epidemic jaundice	107
Abortion, in juridical medicine	336	<i>Bell, Mr. B.</i> , correspondence with Mr Home	82
Absorption, cutaneous, state of knowledge of	181	— description of erythema mercuriale	119
— of spirituous liquors not the cause of intoxication	75	Berlin surgical academy, account of	211
Acidum Benzoicum, new formula for	490	<i>Bertand, Prof.</i> , on the luxation of the lower jaw	109
<i>Adam, Dr.</i> , answers to objections against the cow-pock	486	Bile, expectoration of	397
<i>Adipos meroxa</i> , definition of	92	Birth supposititious, in juridical medicine	337
Affusion, aqueous, reports on	67, 121	Black drop, composition of	503
— cold, successful in trismus	294	Bladder, observations on the puncture of	88, 100
— and ablution, comparative merits of	71	— inverted hernia of	39, 132
Air, analysis of, in places affected with the yellow fever	146	<i>Bliche, Sir Charles</i> , cellular tumour removed by him	93
Albumen, characters of	258	Blight in corn, caused by fungi	380
Alcohol ammoniatum, improved formula	491	Bloodletting, chiefly to be depended on in enteritis	64
<i>Allen, Mr.</i> , theory of respiration	195	— use of, in the drunken paroxysm	80
Amaurosis, effects of Galvanism in	478	— necessary in excursions of the brain	97
Amputation at the shoulder joint	289	Blue girl, case and dissection of	412
Anatomy, pathological, importance of	43	Board of health, institution of	388
<i>Anderson, Mr.</i> , effects of pressure on particular parts of the brain	154	— first report of	494
Animal fluids, analysis of	257	Bombay, diseases of the army at	266
Antivariolous powers of vaccination	124, 248	<i>Bonnet, Mr.</i> , case of impregnation without intromission	133
Aqua ammoniac, improved formula	491	<i>Bonomi, P.</i> , on palsy of the lower extremities	110
<i>Arejula, Dr.</i> , on the fever at Malaga	447	Bony tumour extracted from the orbit	405
Army, diseases of, at Bombay	266	<i>Bartsch, Dr.</i> , on the analysis of animal fluids	257
—, medical establishment of	244	— essay on respiration	194
Arteries, arrangement of, in slow moving animals	226	Botany, principles of	455
Articulations unnatural, cases of	419	Bougie, armed with nitrate of silver, use of in strictures	81
Atmosphere, not chemically affected in yellow fever epidemics	146	Brain, symptoms produced by its compression	150
<i>Baillam, Dr.</i> , on the pneumonic diseases of the poor	166	—, its functions dependent on those of respiration	309
<i>Baillie, Dr.</i> , effects of pressure on particular parts of the brain	154	Breast, cases of tumour in	159
— morbid anatomy of tumours	93	<i>Brown, Dr.</i> , opinion of spasmodic diseases	33
<i>Banks, Sir Joseph, Bart.</i> , on the blight in corn	380	— critique on his works	357
<i>Barclay, Dr.</i> , structure of the membrane lining the urethra	403	<i>Bryce, Mr.</i> , test of constitutional vaccination	125, 240
<i>Barlow, Mr.</i> , on sulphurated potash in tinea capitis	248		
<i>Barthes, Prof.</i> , treatise on gout	212		

INDEX.

Buboes, not a symptom of yellow fever	146	Cow-pox, answer to objections against	465
Bulletin de l'école de médecine de Paris	376	Cow-pock. See Vaccine and Vaccination.	
Burns, Mr, case of malconformation	137	Cox, Dr, on insanity	223
Callicocca ipecaquanha	488	Crichton, Colonel, car for conveying the sick and wounded	252
Cancer, observations on	352	Croup at Bombay	252
— of the testicles cured by the su-		Cruikshanks, Mr, acid and alkali produced by Galvanism in water	395
pervention of scurvy	163	— experiments on perspiration	175
Carbo ligni	487	Cullen, Dr, opinion of chorea	53
Carbuncles not a symptom of yellow fever	146	Currie, Dr James, medical reports	67
Carcinomatous sarcoma	94	— experiments on cutaneous absorption	123
Carmichael, Mr, dissections of an urethra freed from strictures by caustic	416	Cutaneous absorption, state of knowledge of	181
Cataract, extraction of, preferable to depression	437	Cyclopædia, articles written by Dr R. Pearson	509
Carey-Street dispensary, quarterly reports of	123, 246, 386, 514	Cystic sarcoma	93
Carlisle, Mr, arrangement of the arteries in slow moving animals	226	Dalrymple, Mr, remarkable effect of cold affusion	71
Carotid, effects of a ligature on	98	— cure of trismus by cold affusion	294
Cassels, Dr, account of the black drop	508	Darnel, poisonous effects of	106
Catalepsy, case of	61	Darwin, Dr, opinion of chorea	3
Celliez, M. perforation of the tympanum	382	Daubenton, M. recommendation of ipecacuan as a stomachic.	104
Certificates of insanity, observations on	239	Deafness, effects of Galvanism in	477
Childrens diseases, Dr Heberden's epitomy of	221	— cured by perforation of the tympanum	382
Chorea sancta viti, cured by purgatives	25	Decandolle on ipecacuan	103
Cinchona, use of, in gout	211	Degrees granted at Edinburgh in 1805	390, 510
— specific in rheumatism	481	— conditions on which they are granted at Edinburgh	501
Circulation of the colouring part of the blood denied	476	— at Glasgow	512
Citric acid specific in scurvy	283	Delirium, febrile, sometimes mistaken for intoxication	74
Clanny, Dr, case of protrusion of the tongue	317	— for madness	235
Clinical medicine, importance of	479	Depressions of the cranium, when slight, injured by trepanning	97
Cleanliness, a chief agent in preventing contagion	117	Dè Roches, Dr, on the treatment of acute rheumatism with opium	194
Coates, Mr W. H. case of malconformation of the urinary and genital organs	39	Diabetes, a disease of cows and horses	442
Cold affusion, reports on	107, 121	— appearances observed on dissection	314
Cold water, use of, in gout,	207, 213	Digestion, connexion of, with respiration and perspiration	70
— fatal effects of in gout,	209	Digitalis, use of, in inflammations and hæmorrhagies	72
Colic flatulent, case of	318	— use of, in mania	236
Collins, Mr, case of tympanites	298	Diseases produced by strictures in the urethra	87
Combustion of the human body	77	— of vegetables	463
Concussion of the brain, necessity of blood letting in	97	— induced by intoxication	72
Comparative pathology, importance of	440	— infectious in warm countries con-	
Consumption not infectious in this climate	128	— founded with consumption	125
— observations on	127	District surgeons in Germany, duties of	114
Contagion, institution for the cure and prevention of	117	Diuretics, speedy action of	142
— mode of action	368	Dram-drinking, evils of	72
— of yellow fever, inquiry in-	342		
to			
Cooper, Mr Astley, case of malconformation	129		
— dissection of a blue girl	414		

INDEX.

<i>Drew, Dr.</i> , cases of tumours growing within the pelvis	20	Galvanism, elements of	488
Dropsies, causes of sudden death in	506	——— its application to medicine	477
Drunkennes, <i>Dr Trotter</i> , on	73	<i>Garcinia cambogia</i>	488
<i>Duncan, Dr A. jun.</i> systematic account of hernia of the inverted bladder	43, 132	<i>Gattoni, M.</i> experiments on perspiration	177
——— analysis of præternatural ossification	407	Genital organs, malconformation of	39
——— analysis of bilious ex- pectoration	400	Glasgow, lectures at	511
——— case of erythema mer- curiale	18	——— regulations for degrees	512
<i>Duplessy, M.</i> on resinous vegetables	104	<i>Goettlings, Mr.</i> , preparation of muriate of barytes	491
<i>Dupuytren, M.</i> account of a foetus found in the abdomen of a boy	377	<i>Goldson, Mr.</i> , probable causes of his failures in vaccination	125
Dysentery at Bombay	279	<i>Gomes, Mr.</i> , uses cold affusion	70
Edinburgh, university of, regulations re- specting degrees	391	<i>Gorcke, Dr.</i> , account of the surgical aca- demy of Berlin	111
——— pharmacopœia	486	Gout, dissertation on, by <i>Dr Kinglake</i>	200
<i>Edlin, Mr.</i> , fatal cases of gout, from the external use of ice and cold water	209	——— treatise on, by <i>Dr Barthez</i>	212
Encysted tumour	94	——— observations on by <i>Prof. Tavares</i>	211
Ectorpion, observations on	435	Graduates at Edinburgh, 1805, list of	390, 510
Enteritis cured by blood-letting alone	64	<i>Gregory, Dr.</i> , observations on chorea	32
Entropion, observations on	434	Guinea-worm at Bombay	284
Epilepsy produced by pressure on the sciatic nerve	109	Hæmorrhagies, use of digitalis, in	72
Erythema mercuriale, cases of	7	<i>Hamilton, Dr.</i> , improved method of treat- ing chorea	34
Eucalyptus resinifera	488	<i>Hamilton, Dr. jun.</i> case of hernia of the inverted bladder	44
Excitability, observations on	361	Hanging, diagnosis of death from	341
Exercise, use of, in ulcers of the legs	188	Health, Board of, institution of	383
Expenditure of foundling hospitals	329	——— first report of	494
Expectoration, copious, of bile	397	<i>Harrison, Dr.</i> , on the rot in sheep	448
Extraction of the cataract preferable to depression	437	<i>Haygarth, Dr.</i> , clinical history of dis- eases	479
<i>Eye, Prof. Soemmerring's</i> , delineation of	222	<i>Heberden, Dr.</i> , on childrens diseases	221
Eye, on the diseases of	430	Hepatitis at Bombay	280
Eyelid, upper, relaxation of	435	——— case of	397
<i>Fabbiani, M.</i> account of epidemic fever at Leghorn	509	Hermaphrodites, supposed cases of	404
Febrifuge, cold water a chief	122	Hernia, case of	318
Fever, use of water in	67	——— singular variety of	253
——— generalization of the means of cure	425	<i>Home, Mr.</i> , practical observations on stric- tures	61
——— at Bombay	280	——— on cancers	352
——— at Malaga, description of	447	Homicide	337
——— institution, account of	117	Hospitals, foundling, hurtful institutions	319
Fistula in ano, instrument for	467	——— pharmacopœia	462
——— lachrymalis	431	Hypochondriasis, diagnosis of	235
Fluids, animal, analysis of	257	Hypopion, observations on	436
<i>Fodere, M.</i> on medical jurisprudence	330	Iliac external, ligature of	99
Fœces in chorea, black	30	Impregnation, case of, without intro- mission	138
Fœtus found in the abdomen of a boy	377	Infection distinguished from contagion	349
Foramen ovale open in an adult	415	Inflammations, use of digitalis in	74
Foundling hospitals inexpedient	319	<i>Ingenbous,</i> experiments on perspira- tion	175
<i>Fardyce, Dr.</i> , discoverer of the disinfecting power of mineral acids	506	<i>Iaglis, Dr.</i> , case of diseased portions of the tongue, removed by ligature	34
Fractures, long standing, cure of	419	——— on the cure of unnatural arti- culations	419
Fungi, cause of blight in corn	980	Inhalation, state of knowledge of	181
Gall stone, adhering to the bladder	109	Injectons, circumstances influencing their success	403

INDEX.

Insanity, <i>Dr Cox's</i> , observations on	228	Lymphatics filled by injecting the arteries	403
Intestinal discharge, connexion of, with chorea	31	<i>McGregor, Dr</i> , on the diseases of the army at Bombay	266
Intoxication to be distinguished from delirium	74	<i>McMullin, Mr</i> , on the treatment of chorea by purgatives	25
Ipecacuan furnished by various plants	109	<i>Mabon, Prof.</i> on medical jurisprudence	330
Jaundice, epidemic, at Genoa	107	Malaga, fever at, description of	447
Jaw, lower, luxation of	109	Malignancy of other diseases, does not precede yellow fever	144
Jelly, characters of	261	<i>Marcel, Dr</i> , case of a blue girl	412
Jesty, farmer, the original vaccinator	513	<i>Marchelli</i> on vaccination	107
<i>Jenner, Dr</i> , on the failure of vaccination from herpetic eruptions	249	<i>Marshall, Mr</i> , success of, in the cure of fever by cold affusion	69
Joints, nodosity of, clinical history of	484	Mastoid tumour	93
———— artificial, cure of	419	<i>Maussir, M.</i> perforation of the tympanum	362
Juridical medicine, treatises on	330	Materia medica, tables of	492
<i>Jurine, M.</i> experiments on perspiration	176	Measles, cold affusion used in	68
Jurisprudence of insanity, observations on	229	Medical jurisprudence, treatises on	330
Kali purum, use of, as a caustic in strictures in the urethra	214	Medical officers of the army, regulations concerning	244
<i>Kellie, Dr</i> , on the functions of the skin	170	Medical officers of the navy, regulations for improving their situation	241
———— observations on Galvanism	474	Medullary tumour	93
———— case of torpor from cold, &c.	302	Mercury, use of, in schirrous liver	80
<i>Kinglake, Dr</i> , dissertation on gout	200	———— oxymuriate of, a test of albumen	259
———— reply to Mr Edling	210	<i>Milly, Count De</i> , experiments on perspiration	174
<i>Kirby, Dr</i> , tables of materia medica	492	Mineral acids, discovery of their disinfec-ting power	506
Knee joint, loose bodies removed from	101	<i>Mojon, B.</i> epilepsy produced by pressure on the sciatic nerve	109
<i>Lair, P. Aime</i> , cases of spontaneous combustion of the human body	77	<i>Monro, Dr, sen.</i> observation of chorea produced by teething	32
<i>La Motte's</i> definition of tumours	91	———— on the luxation of the lower jaw	109
<i>Lavoisier</i> , experiments on perspiration	172	<i>Monro, Dr, jun.</i> case of hepatitis	397
Lead, acetite of, a test of mucus	263	Morality injured by foundling hospitals	326
Lectures delivered in Edinburgh	511	Mortality in foundling hospitals	322
———— Glasgow	511	Mucus, characters of	262
Leghorn, fever epidemic at	309	Muriate of barytes, how prepared from the sulphate	490
Legislature, act of, regarding foundling hospitals	382	———— of lime, a remedy in scru-fula	147
Legitimacy of children	304	———— on preparing it of an equal strength	149, 509
Ligature, successfully employed in removing diseased portions of the tongue	34	Muriatic acid, composition of	393
<i>Leveille, M.</i> on the diseases of the eyes	430	<i>Nagle, Mr</i> , on cold affusion	71
<i>Lindsay, Capt.</i> means of curing scurvy	105	Narcotics, not always in the first instance stimulæ	75
Literature of the hernia of the inverted bladder in the male	58	Natural history, dictionary of	102
———— in the female	138	Navy, regulations for improving the situations of the medical officers in	241
<i>Livingston</i> , singular case of cancer in the testicles	163	<i>Nebel, Dr</i> , case of malconformation	135
Lobium temulentum, poisonous effects of	106	Nitric acid, fails in curing scurvy	253
<i>Lubbock, Dr</i> , observations on catalepsy	61	Nodosity of the joints, clinical history of	404
<i>Lucas, M.</i> case of bony tumour extracted from the orbit	405		
Lungs, left side most affected in consumption	127		
———— inferior parts most affected with tubercles	127		
———— universal adhesion of, effects of	414		
Luxation of the lower jaw	109		

INDEX.

Nomenclature pharmacœutic	480	Protrusion of the tongue cured	317
Oesophagus, strictures in, cured by caustic bougie	89	Psychotria emetica affords an ipecacuan	103
Ophthalmia, observations on	435	Pubes, natural separation of the bones of	50, 130
Opiates, successful in flatulent colic, with hernia	318	Purgatives, use of, in chorea sancti Viti	26
Opium, use of, in acute rheumatism	154	———— danger of, in enteritis	64
Orbit, bony tumour extracted from	405	Rape, in juridical medicine	336
Oseous tumours	95	Rectum, stricture in, cured by the armed bougie	89
Ossifications, cause of sudden death in dropsies		Reeve, Dr, cases of the tumour in the breast	159
<i>Pacchioni, P.</i> on the composition of muriatic acid	393	Refrigeration, use of, in the drunken paroxysm	80
Palsy of the lower extremities	110	Rest, use of, in ulcers of the legs	188
Pancreatic sarcoma	93	Resinous vegetables, history of	104
Paralysis, effects of Galvanism in	477	Respiration, essay on	194
Pathological anatomy, importance of	43	———— connexion between its functions and those of the brain	308
<i>Pearson, Dr George</i> , on the failure of vaccination	249	———— connexion of, with digestion and perspiration	70
———— medical lectures by	512	———— said to be a Galvanic process	475
———— <i>Dr R.</i> encomium on muriate of lime	509	Retina, observations on the termination of	224
———— articles written by him in the Cyclopædia	509	Rheumatism, acute, treated with opium	154
<i>Peele, Mr</i> , production of a muriatic salt by Galvanization	396	———— clinical history of	480
Pelvis, tumour growing within, successfully removed by operation	20	<i>Robertson, Dr</i> , method of extracting polypi	410
<i>Ponchiernati, M.</i> case of malconformation	135	<i>Robinson, Dr</i> , case of amputation at the shoulder joint	289
Perforation of the tympanum successful in deafness	382	<i>Rosse, Prof.</i> de vesicæ urinariæ prolapsu nativo	44
Perspiration, connexion of, with digestion and respiration	70	<i>Ross, Dr</i> , case of hernia	318
———— induced by cold affusion in fever	121	Rot in sheep, essay on	440
———— state of knowledge of	171	<i>Rumsey, Mr</i> , case of enteritis	64
Pharmacopœia collegii regii medicorum Edinburgensis	486	<i>Rush, Prof.</i> yellow fever not contagious	342
———— nosocomii Edinburgensis	492	<i>Russell, Mr</i> , case of hernia	253
Phthisis pulmonalis, a disease of cows and sheep	441	<i>Rutherford, Prof.</i> dissections of diabetic cases	314
———— reason why it is incurable	428	Saint Vitus's dance cured by purgatives	25
———— rare at Bombay	262	Salivation, induced by enclosing portions of the tongue within ligatures	35
Pleurodyne rheumatica, observations on	167	Sallad, small, use of, in scurvy	165
Pneumonic diseases of the poor, observations on	166	Sarcoma, definition of	92
Poisoning, in juridical medicine	399	Scab in sheep	441
Polypus of the nose, cases of	463	Scarlatina, use of cold affusion in	68
———— instruments for extracting	410	<i>Scarpa, M.</i> on the diseases of the eyes	430
Pressure, use of, in ulcers of the legs	192	Scrofula, cured by muriate of lime	147
———— its effects in fractures	419	———— affects monkeys	441
———— on the sciatic nerve, producing epilepsy	109	Scurvy at Bombay	282
<i>Priestly, Mr</i> , experiments on perspiration	175	———— sea, cancer of the testicles cured by its supervention	163
<i>Prost, M.</i> on organic pathology	453	Secondary salts, tables of	492
		Sedatives, observations on	367
		<i>Seguin, M.</i> experiments on cutaneous absorption	184

I N D E X.

Shield for inverted hernia of the bladder	142	Tinea capitis, cured by sulphurated potash	248
Shingles, cure of	388	Tongue, diseased portion of, removed by ligatures	35
Shock, mode of cure in fevers	327	—— protrusion of cured	317
<i>Shoolbred</i> , progress of vaccination in Bengal	251	Torpor from cold, cured by exciting the muscles of respiration	303
Skin, functions of	170	Trephine, hurtful in slight depressions of the cranium	97
Sleep induced by cold affusion	71, 121	Trichiasis, observations on	434
Slow-moving animals, arrangement of arteries in	226	Trismus, cured by cold affusion	294
Small-pox, use of cold affusion in	69	<i>Trotter</i> , Dr, essay on drunkenness	73
—— on the diminution of, by vaccination	250	<i>Trousset</i> , M. experiments on perspiration	180
—— again inoculated in London	507	Tubercles, pulmonary, frequency of	126
Society, medical and surgical	383	—— do not always induce consumption	127
<i>Soemmering</i> , delineation of the human eye	222	—— seldom fatal until they become vomice	128
<i>Spallanzani</i> , M. experiments on perspiration	180	Tuberculated tumour	93
Spasms, effects of Galvanism in	478	Tumours, classification of	90
<i>Spens</i> , Dr, cases of erythema mercuriale	7	—— in the breast, cases of	159
Stalagmitis cambogiodis	488	—— in the brain, effects of	150
Staphyloma, observations on	439	—— growing from the sacro-sciatic ligament, successfully removed by operation	20
State-medicine, division of	330	Tympanites, case of	298
Stimulants have often no narcotic powers	75	Tympanum, perforation of	392
Stimuli not different in degree only	365	Ulcerated legs, on the treatment of	187
Strictures of the urethra and œsophagus, <i>Mr Home</i> on	81	Umbilicus, unnatural situation of	54
Strictures in the urethra, <i>Mr Whately's</i> method of treating	214	Unguentum nitratis hydragryi improved	489
—— dissection of an urethra from which they had been removed	416	University, regulations respecting degrees of, at Edinburgh	391
<i>Stringham</i> , Prof. on the yellow fever	149	—— at Glasgow	612
Stye, observations on	433	—— medical classes, at Edinburgh	511
Sulphurated potash, use of, in tinea capitis	248	—— at Glasgow	511
Surgical academy at Berlin, account of	111	Urea contained in the perspiration of the horse	174
Swing, use of, in mania	239	Ureters opening externally	39
<i>Sydenham's</i> opinion of chorea	32	—— uncommon size of	49
Symptomatic diseases induced by strictures in the urethra	83	Urethra, strictures of, removed by the armed bougie	61
Syphilis, diseases resembling	95	—— <i>Mr Whately's</i> method of treating	214
Tannin, a test of jelly	262	—— structure of inner membrane of	403
<i>Tavares</i> , Dr, observations on gout	211	—— from which strictures had been removed by caustic, dissection of	416
Teething, second, a cause of chorea	32	Urinary calculus adhering to the bladder	109
—— first, a cause of epilepsy	ib.	—— organs, malconformations of	39, 46
Temperature, diminished, observations on	303	Ussem, Matthew, case of	44
—— increased, good effects of, in consumption	127	Vaccination, antivariolous power of	124, 248
Tepid affusion, reports on	67	—— progress of	251, 384
Tetanus, cured by affusion of water	ib.	—— first performed by farmer	513
—— at Bombay	283	Jesty	107
<i>Thomson</i> , Mr, dissection of a singular variety of hernia	253	<i>Marchelli</i> on	107
Throat, remarkable wound of	98	Vaccine institution, resolutions of	355
Tic douloureux, in the ring finger	100		
Tinctures, spirituous, lead to dram-drinking	78		

INDEX.

Vaccine mixture of, with variolous matter	507	<i>Whately, Mr.</i> , on polypus of the nose	465
Variolous matter, mixture of, with vaccine	507	<i>Willdenow, Prof.</i> , principles of botany	455
Veins filled by injecting the arteries	403	<i>Wilkinson, Mr.</i> , elements of Galvanism	468
Ventilation, a chief agent in counteracting contagion	117	<i>Wood, Dr.</i> , on the use of muriate of lime	147
Water, effects of, as a remedy in fever and febrile diseases	67	Wounds, in juridical medicine	339
<i>Whately, Mr.</i> , on strictures in the urethra	214	Yellow fever, observations on	143
		———— at Malaga	447
		———— proofs that it is not contagious	342
		Zona herpetica, observations on	388

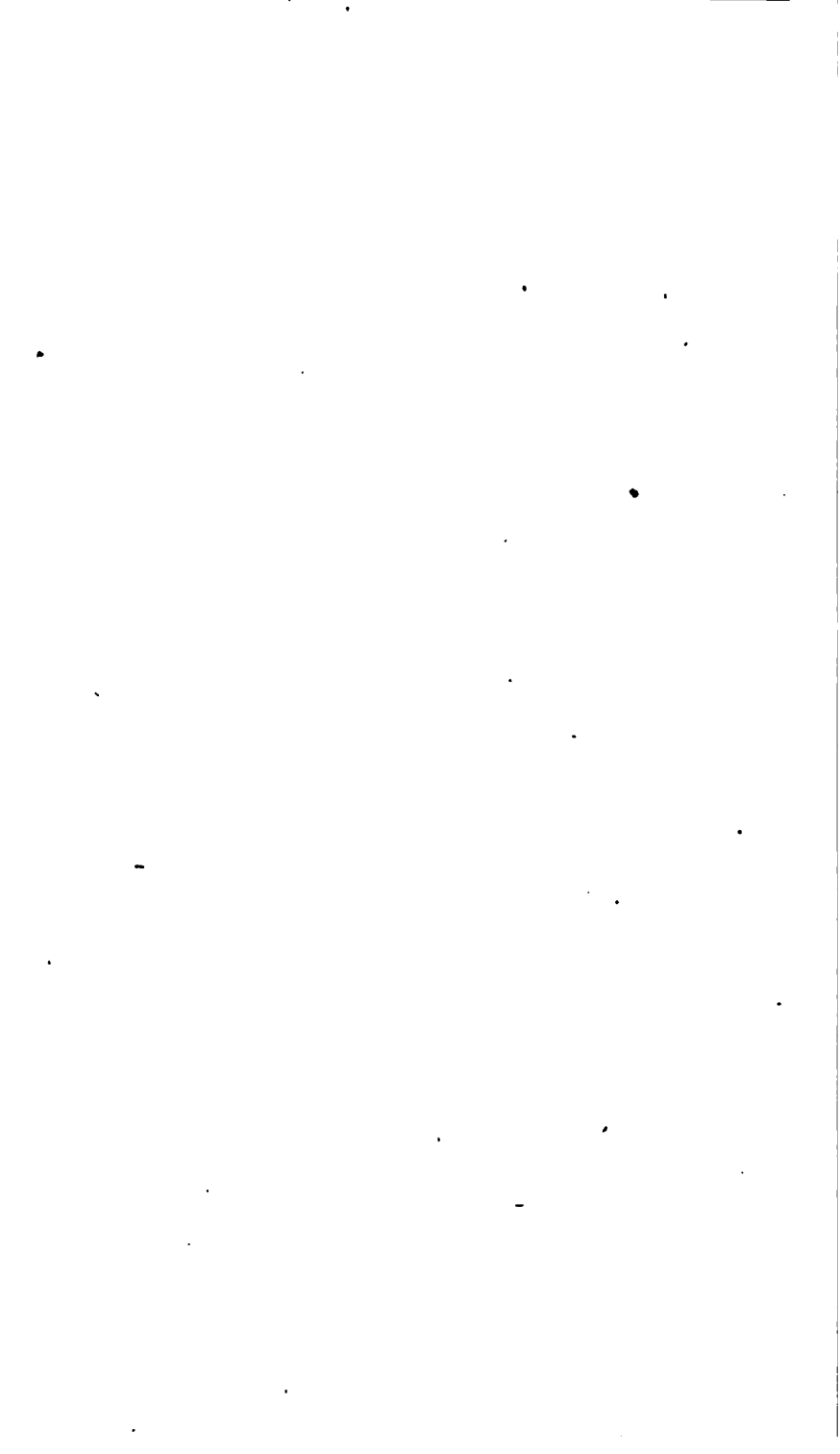
ERRATA.

Page 389. line 9. for *effervescence*, read *efflorescence*; p. 402. l. 22. for *and it*, read *Ec.* l. 40. for *cystireea*, read *cystirrhaea*, and for *diarrhea*, read *diarrhaea*; p. 403. l. 24. for *glabellar*, read *inial*; p. 536. and 537. for *optbalnia*, read *ophthalmia*; p. 436. l. 15. before *on the natural families of plants*, read *After some observations*; p. 457. l. 43. for *extracted*, read *extricated*; p. 460. l. 7. for *also*, read *alone*.

TO CORRESPONDENTS.

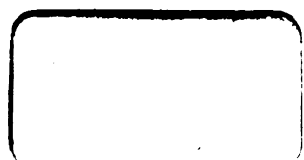
Several valuable Communications arrived too late for insertion in this Number. They should, if possible, be sent a month or six weeks previous to the day of publication, addressed to Mess. Constable and Co. Booksellers, Edinburgh; Longman, Hurst, Rees, & Orme, London; or Gilbert & Hodges, Dublin.—We do not think proper at present to reprint the Letters on the Cambridge degrees; but we consider ourselves personally obliged for the information conveyed in them, and request that we may be allowed to keep the originals.

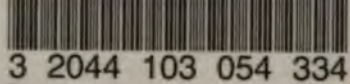
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